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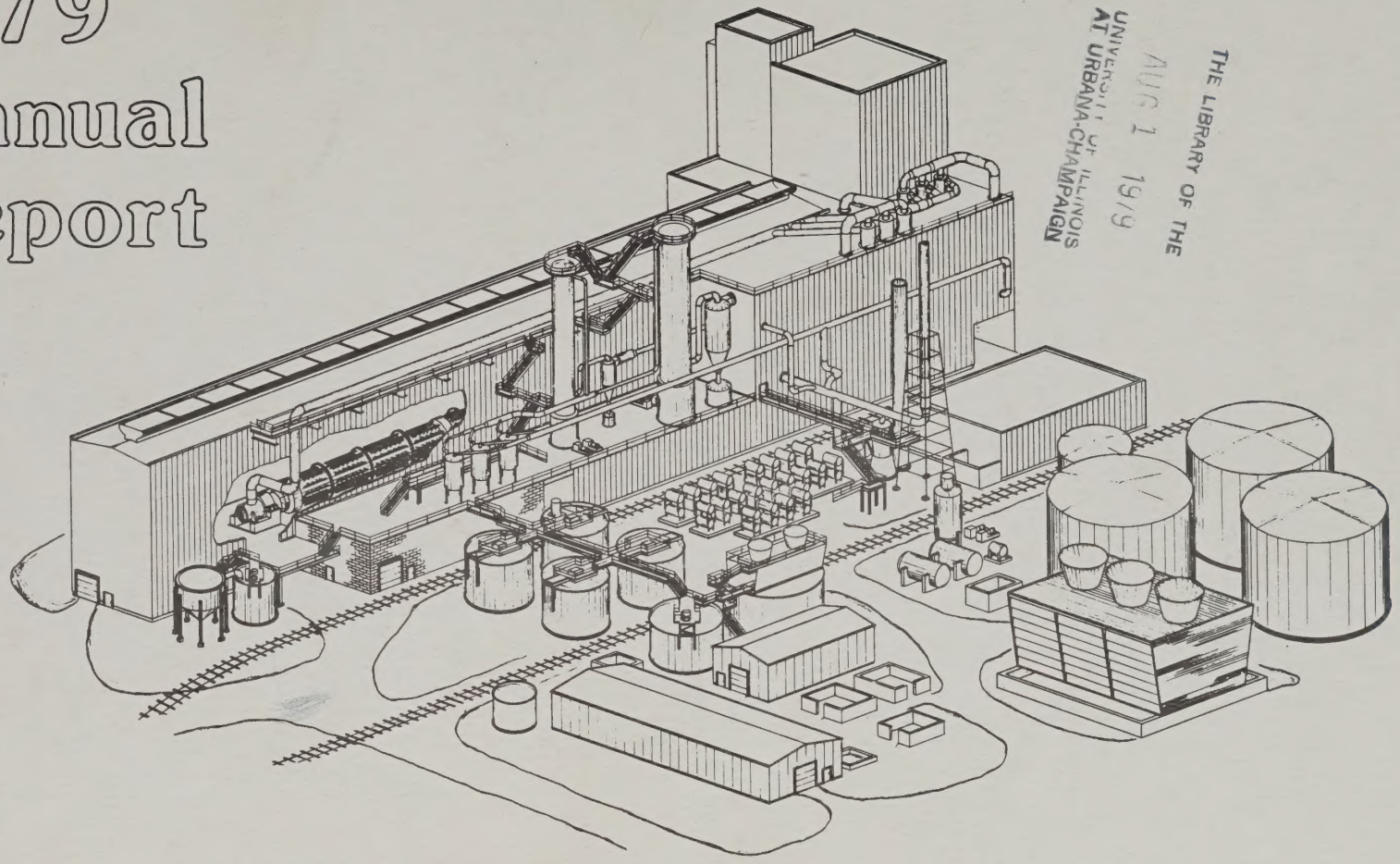
ILLINOIS ENERGY RESOURCES COMMISSION

1979 Annual Report



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KILnGAS DEMONSTRATION PROJECT AT WOOD RIVER, ILLINOIS

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ILLINOIS ENERGY RESOURCES COMMISSION, 1979

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Dale Wade

To: Members of the 81st General Assembly

Dear Legislator:

The attached 1979 Annual Report of the Illinois Energy Resources Commission is submitted herewith in accordance with PA 78-1125. It presents a detailed accounting of the Commission's activities in calendar year 1978 with reference where appropriate to projects of prior years and plans for the future.

We urge you to give particular attention to Section VII, which includes recommendations developed by the Commission's Study Panels for legislative action with regard to coal, electric utilities, energy conservation, natural gas and petroleum, solid waste and biomass, and solar energy. As a member of the 81st General Assembly in this year of worldwide energy crisis, you are confronted with the difficult and urgent problem of setting priorities in Illinois's energy program. It is the Commissions hope that its Study Panel guidelines will be of assistance to you in meeting this need.

Since its formation in 1975, the Commission has devoted much time and effort to promoting the development of Illinois coal as an environmentally sound and economically feasible source of energy. As the need for energy sources other than petroleum grows, the importance of supporting projects designed to make use of Illinois's vast coal reserves increases. Section IX reviews projects and processes that appear to have the potential to enhance the value of Illinois coal as an energy source. Please take special note of the KILnGAS project, for which Coal Development Bond funding was just approved this year.

The Commission will continue in 1979, as in years past, to maintain an ongoing review of the energy situation in Illinois, to work to create and enhance public awareness of energy problems and prospects, and to develop a comprehensive energy policy and plan through recommendations for legislation and other governmental action. We encourage you to make use of the information and services available through the Commission and its staff.

Sincerely,

Representative Daniel M. Pierce, Chairman

Senator John J. Nimrod, Vice Chairman

Dr. James P. Hartnett, Secretary

ILLINOIS ENERGY RESOURCES COMMISSION

1979 ANNUAL REPORT

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I. OFFICERS AND MEMBERS OF THE ILLINOIS ENERGY RESOURCES COMMISSION

CHAIRMAN

Representative Joe E. Lucco

VICE CHAIRMAN

Senator John J. Nimrod

SECRETARY

Dr. James P. Hartnett

LEGISLATIVE MEMBERS

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Senator Gene Johns
Senator John L. Knuppel
Senator Robert W. Mitchler
Representative Ralph Dunn
Representative Adeline J. Geo-Karis
Representative Richard O. Hart
Representative Daniel M. Pierce

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Dale Wade

II. ENABLING LEGISLATION

A. PA 78-1125: ILLINOIS ENERGY RESOURCES COMMISSION (Ch. 96 1/2, par. 101 et seq.)

101. Creation-Organization-Meetings.] Section 1. There is created the Illinois Energy Resources Commission, hereinafter in this Act called the Commission.

The Commission shall consist of 3 members of the House of Representative and two public members all appointed by the Speaker of the House; 2 members of the House of Representatives and 2 public members all appointed by the Minority Leader of the House; 3 members of the Senate and two public members all appointed by the President of the Senate; 2 members of the Senate and 2 public members all appointed by the Minority Leader of the Senate.

The Commission shall select from its membership a Chairman who shall be a legislative member and any other officers it considers necessary. The Chairmanship of the Commission shall rotate biannually between the houses of the General Assembly in accordance with the appointment schedule set forth in Section 2 of this Act, except that the member of the General Assembly elected to be the first Chairman of the Commission shall be eligible to succeed himself for a second, consecutive term as Chairman.

The Commission shall meet at the call of the Chairman after due and reasonable notice to all Commission members, except that a majority of the Commission members may convene a meeting of the Commission in the event the Chairman refuses to do so.

102. Membership-Appointments-Terms-Vacancies-Compensation.] Section 2. The initial membership shall be appointed within thirty days after the effective date of this Act, and serve until June 30, 1975. Thereafter, the membership shall be appointed during the month of June in each odd numbered year and shall serve terms of two years, beginning on July 1 of the year in which they were appointed, or until their respective successors are appointed. All appointments must be in writing and filed with the Secretary of State as a public record.

Vacancies in the membership of the Commission shall be filled in the same manner as the original appointments. Members of the Commission shall serve without compensation, but shall be reimbursed for actual expenses incurred in the performance of their duties.

103. Powers and duties.] Section 3. The Commission shall: (1) study, review and make recommendations on the administrative structure the State should adopt for the efficient management of the State's effort in finding solutions to energy related problems;

(2) study, review and make recommendations to coordinate the proposed or ongoing programs of the various State agencies with reference to the solution of energy related problems;

(3) study and make recommendations concerning a long-range program relating to energy resources and related problems, including but not limited to conservation of energy, development of energy resources, environmental considerations and other related problems;

(4) seek the cooperation and assistance of energy producers, institutions of higher education, energy research institutions, and other public and private organizations and groups interested in finding solutions to energy-related problems;

(5) promote the establishment by the federal government of a coal resource, research and development center and other federal energy projects in Illinois, and search for additional or other means of using Illinois coal to meet Illinois energy needs with due attention to environmental priorities;

(6) disseminate relevant information to the public for purposes of consumer education and protection;

(7) accept gifts, bequests, grants and other forms of assistance where made for energy-related purposes from any source. The Commission shall report any assistance made for energy-related purposes to the Legislative Leadership in the House and Senate.

(8) within 30 days of receipt of any gifts, bequests, grants or other forms of assistance, where made for energy-related purposes from any source, notify the General Assembly;

(9) upon completion of any study on the efficient management of the State's effort in finding solutions to energy related problems, report such findings to the General Assembly and the Governor;

(10) any assistance made for energy-related purposes to the Energy Resources Commission, as set forth in paragraph 7, shall become part of the General Revenue Fund. These funds shall not be expended without prior appropriation by the General Assembly.

104. Capital development of coal resources program-Proposed projects-Review and approval.] Section 4. All proposed projects under the program of capital development of coal resources funded through the sale of general obligation bonds created in "An Act to provide for the financing of a State program for research, development and demonstration in coal and energy; to authorize the issuance and sale of general obligation bonds of the State of Illinois; and to provide for the payment of the principal of and interest on such bonds," enacted by the 78th General Assembly, shall be submitted for review and by a majority vote approval or rejection by the Commission. The Commission shall review and by a majority vote approve or reject each such project and a dollar cost range. Such review and approval or rejection shall be made within 45 days of the receipt of each proposal by the Commission.

No expenditure of general obligation bond funds for the development of coal resources shall be made without the prior approval of the specific project by the Commission, except that a specific proposal shall be deemed to be approved if the Commission fails to act within the 45 day period.

105. Personnel and services-Employment or contract.] Section 5. The Commission may, without regard to the Personnel Code, employ or contract for the personnel and services necessary to develop the capability of analyzing and making recommendations to the Commission pursuant to the provisions of this Act.

106, Cooperation of State agencies and offices.] Section 6. In aid of the Commission's work, all departments, divisions, agencies and offices of the State shall afford to the Commission any requested resources, information, records, or advice pertinent to the subject matter under study.

107. Grants or funds.] Section 7. In the performance of its duties, the Commission may accept grants or funds from the federal government, foundations, or other public or private organizations.

108. Findings and recommendations-Annual report.] Section 8. The Commission shall submit an annual report of its findings and recommendations to the General Assembly, no later than March 15 of each year.

B. PA 78-1122: ILLINOIS COAL AND ENERGY DEVELOPMENT BOND ACT

AN ACT to provide for the financing of a State program for research, development and demonstration in coal and energy; to authorize the issuance and sale of general obligation bonds of the State of Illinois; and to provide for the payment of the principal of and interest on such bonds. P.A. 78-1122, approved and eff. Aug. 19, 1974.

(Ch. 96 1/2, par. 4101 et seq.)

4101. Section 1. Short title. This Act shall be known and may be cited as "The Illinois Coal and Energy Development Bond Act".

4102. Definitions.] Section 2. As used in this Act, "coal" or "coal resources" include coal, coal products or by-products, including electricity and synthetic fuels. "Development of coal resources" includes research, development, and demonstration of improved methods of discovery, production, transportation, sale, distribution, conversion, end-use and waste disposal of coal resources. "Other forms of energy" includes solar energy, geothermal, wind generation, solid waste or any other energy system except that which is generated by nuclear energy.

4103. Business and Economic Development Department-Powers and duties.] Section 3. The Department of Business and Economic Development shall have the following powers and duties:

(a) To solicit, accept and expend gifts, grants or any form of assistance, from any source, including but not limited to, the federal government or any agency thereof;

(b) To enter into contracts with business, industrial, university, governmental or other qualified individuals or organizations to promote development of coal and other energy resources. Such contracts may be for, but are not limited to the following purposes: (1) the commercial application of existing technology for development of coal resources, (2) to initiate or complete development of new technology for development of coal resources, and (3) for planning, design, acquisition, development, construction, improvement and financing a site or sites and facilities for establishing plants, projects or demonstrations for development of coal resources and research and development of other forms of energy; and

(c) In the exercise of other powers granted it under this Act, to acquire property, real, personal or mixed, including any rights therein, by exercise of the power of condemnation in accordance with the procedures provided by "An Act to provide for the exercise of eminent domain", approved April 12, 1872, as amended, provided, however, the power of condemnation shall be exercised solely for the purposes of siting and/or rights of way and/or easements appurtenant to coal utilization and/or coal conversion projects. The Department shall not exercise its powers of condemnation until it has used reasonable good faith efforts to acquire such property before filing a petition for

condemnation and may thereafter use such powers when it determines that such condemnation of property rights is necessary to avoid unreasonable delay or economic hardship to the progress of activities carried out in the exercise of powers granted under this Act. After June 30, 1985, the Department shall not exercise its power of condemnation for a project which does not receive State or U.S. Government funding. Before use of the power of condemnation for projects not receiving State or U.S. Government funding, the Department shall hold a public hearing to receive comments on the exercise of the power of condemnation. The Department shall use the information received at hearing in making its final decision on the exercise of the power of condemnation. The hearing shall be held in a location reasonably accessible to the public interested in the decision. The Department shall promulgate guidelines for the conduct of the hearing.

4104. Energy, Advisory Council on Coal Development.] Section 4. The Illinois Energy Advisory Council on Coal Development, referred to in this Act as the "Council" is created.

The Council shall be composed of the Governor, the Lieutenant Governor, the Director of the Department of Business and Economic Development, the Chairman of the Capital Development Board, the Director of the Department of Mines and Minerals, the Secretary of the Department of Transportation, the Chief of the Illinois Water Survey, the Chief of the Illinois Geological Survey, the Chairman of the Illinois Commerce Commission and the Director of the Environmental Protection Agency.

The Governor shall serve as chairman of the Council and the Lieutenant Governor as vice-chairman.

4105. Council meetings-Recommendations.] Section 5. The Council shall convene at the call of the Chairman. It shall advise the Department of Business and Economic Development in relation to projects authorized under this Act and shall offer to the Department such recommendations as it deems appropriate for the development of the coal resources of Illinois. The Council may also assist the Department in securing matching funds for projects authorized under this Act.

4106. Projects approved for expenditure of funds.] Section 6. The Department of Business and Economic Development is authorized to use $70,000,000 for the purposes specified in this Act. These funds shall be expended only on projects for which previous approval of the Illinois Energy Resources Commission has been granted.

4107. Section 7. Bonds.] The State of Illinois is authorized to issue, sell and provide for the retirement of general obligation bonds of the State of Illinois in the amount of $70,000,000 hereinafter called "Bonds", $65,000,000 of which shall be for the specific purposes of acquisition, development,

construction, reconstruction, improvement, financing, architectural and technical planning and installation of capital facilities consisting of buildings, structures, durable equipment, and land for the purpose of capital development of coal resources, and $5,000,000 of which shall be for research and development of other forms of energy. The aggregate principal amount of bonds which may be authorized by this Act is $70,000,000.

4108. Section 8. Sale of bonds.] The bonds shall be issued and sold from time to time in such amounts as directed by the Governor, upon recommendation by the Director of the Bureau of the Budget. The bonds shall be serial bonds in the denomination of $5,000 or some multiple thereof, shall be payable within 30 years from their date, shall bear interest payable annually or semiannually from their date at the rate of not more than 7% per annum, shall be dated, and shall be in such form as the Director of the Bureau of the Budget shall fix and determine in the order authorizing the issuance and sale of the bonds, which order shall be approved by the Governor prior to the giving of notice of the sale of any of the bonds. These bonds shall be payable as to both principal and interest at such place or places, within or without the State of Illinois, and may be made registrable as to either principal or as to both principal and interest, as shall be fixed and determined by the Director of the Bureau of the Budget in the order authorizing the issuance and sale of such bonds. The bonds may be callable as fixed and determined by the Director of the Bureau of the Budget in the order authorizing the issuance and sale of the bonds; provided however, that the State shall not pay a premium of more than 3% of the principal of any bonds so called.

4109. Section 9. Authentication of bonds.] The bonds shall be signed by the Governor and attested by the Secretary of State under the printed facsimile seal of the State and countersigned by hand by the Treasurer or by his duly authorized deputy. The signatures of the Governor and the Secretary of State may be printed facsimile signatures. Interest coupons with facsimile signatures of the Governor, Secretary of State and Treasurer may be attached to the bonds. The fact that an officer whose signature or facsimile thereof appears on a bond or interest coupon no longer holds such office at the time the bond or coupon is delivered shall not invalidate such bond or interest coupon.

4110. Section 10. Bond proceeds.] The bonds shall be sold from time to time by the Director of the Bureau of the Budget to the highest and best bidders, for not less than their par value, upon sealed bids, at not exceeding the maximum interest rate fixed in the order authorizing the issuance of the bonds. The right to reject any and all bids may be reserved. The Secretary of State shall, from time to time, as the bonds are to be sold, advertise in at least two daily newspapers, one of which is

published in the City of Springfield and one in the City of Chicago, for proposals to purchase the bonds. Each of such advertisements for proposals shall be published once at least 10 days prior to the date of the opening of the bids. The executed bonds shall, upon payment therefor, be delivered to the purchaser, and the proceeds of the bonds shall be paid into the State Treasury. The proceeds of the bonds shall be deposited in a separate fund known as the "Coal Development Fund", which separate fund is hereby created.

4111. Section 11. Expenditure of funds.] At all times, the proceeds from the sale of bonds are subject to appropriation by the General Assembly and may be expended in such amounts and at such times as the Department of Business and Economic Development, with the approval of the Illinois Energy Resources Commission, may deem necessary or desirable for the specific purposes contemplated by this Act.

4112. Section 12. Investment of proceeds.] The Treasurer may, with the approval of the Governor, invest and reinvest any money in the Coal Development Fund in the State Treasury which, in the opinion of the Governor communicated in writing to the Treasurer, is not needed for current expenditures due or about to become due from such funds. Such investments shall be made at the existing market price and in any event not to exceed 102% of par plus accrued interest, in obligations, the principal of and interest on which is guaranteed by the United States Government; any certificates of deposit of any state or national bank which are fully secured by obligations, the principal of and interest on which is guaranteed by the United States Government or secured by Bonds of this State or any of its units of local government, school districts, or junior college districts or municipal bonds of other states; or bonds, notes or debentures of the Illinois Building Authority, Illinois Toll Highway Authority, or Illinois Housing Development Authority. Securities of other states and their political subdivisions shall not be accepted at an amount exceeding 90% of their market value. All securities shall be subject to acceptance only upon the approval of the Treasurer. The cost price of all such obligations shall be considered as cash in the custody of the Treasurer, and such obligations shall be conveyed at cost price as cash by the Treasurer to his successor. The money in the Coal Development Fund in the form of such obligations shall be set up by the Treasurer as separate accounts and shown distinctly in every report issued by him regarding fund balances. All earnings received upon any such investment shall be paid into the General Revenue Fund. All of the monies other than accrued interest received from the sale or redemption of such investments shall be replaced by the Treasurer in the funds from which the money was removed for such investment.

4113. Section 13. Repayments.] To provide for the manner of repayment of the bonds, the Governor shall include an appropriation in each annual State Budget of such monies as shall be necessary and sufficient for the period covered by such budget to pay the interest, as it shall accrue, on all bonds issued under this Act and also to pay and discharge the principal of the bonds as shall by their terms fall due during such period. A separate fund in the State Treasury called the "Coal Development Bond Retirement and Interest Fund" is hereby created. The General Assembly shall make appropriations to pay the principal of and interest on the bonds from the Coal Development Bond Retirement and Interest Fund. If for any reason the General Assembly fails to make appropriations of amounts sufficient for the State to pay the principal of and interest on the bonds as the same shall by the terms of the bonds become due, this Act shall constitute an irrevocable and continuing appropriation of all amounts necessary for that purpose, and the irrevocable and continuing authority for and direction to the Comptroller and to the Treasurer of the State to make the necessary transfers out of and disbursements from the revenues and funds of the State available for that purpose.

4114. Section 14. Bond repayment-General obligations.] All bonds issued in accordance with the provisions of this Act shall be direct, general obligations of the State of Illinois and shall so state on the face thereof, and the full faith and credit of the State of Illinois are hereby pledged for the punctual payment of the interest thereon as the same shall become due and for the punctual payment of the principal thereof at maturity, and the provisions of this Section shall be irrepealable until all such bonds are paid in full as to both principal and interest.

4115. Section 15. Default.] If the State fails to pay the principal of, or interest on, any of the bonds as they become due, a civil action to compel payment may be instituted in the Supreme Court of Illinois as a court of original jurisdiction by the holder or holders of the bonds on which such default of payment exists. Delivery of a summons and a copy of the complaint to the Attorney General shall constitute sufficient service to give the Supreme Court of Illinois jurisdiction of the subject matter of such a suit and jurisdiction over the State and its officers named as defendants for the purpose of compelling such payment. Any case, controversy or cause of action concerning the validity of this Act relates to the revenue of the State of Illinois.

4116. Section 16. Treasurer and Comptroller.] Upon each delivery of bonds authorized to be issued under this Act, the Treasurer and the Comptroller shall compute the total amount of principal of and interest on the bonds issued that will be payable in order to retire such bonds and the amount of principal of and interest on such bonds that will be payable on each payment date according to the tenor of such bonds during the then current and each succeeding fiscal year.

On or before that last day of the month preceding each payment date, the Treasurer and the Comptroller shall transfer from the General Revenue Fund in the State Treasury to the Coal Development Bond Retirement and Interest Fund a sum of money, appropriated for such purpose, so that the Fund contains an amount equal to the aggregate of the amount of principal and interest payable by the terms of the bonds on the next payment date. Such computations and transfers shall be made for each series of the bonds issued and delivered. The transfer of monies directed by this Section is not required if monies in the Coal Development Bond Retirement and Interest Fund received from other sources are more than the amount otherwise to be transferred as herein provided, and if the Governor so notifies the Comptroller and the Treasurer.

4117. Section 17. Refunding bonds.] The State of Illinois is authorized, from time to time as the Governor shall determine, to issue, sell and provide for the retirement of bonds of the State of Illinois for the sole purpose of refunding all or any portion of the principal of the bonds issued under the provisions of this Act; provided that such refunding bonds shall mature no later than the final maturity date of the bonds being refunded. Such refunding bonds shall in all other respects be subject to the terms and conditions of Sections 9, 10, 12, 13, 14, 15, 16, and 17 of this Act. The principal amount of any refunding bonds shall not exceed 103% of the principal amount of the bonds refunded with the proceeds of such refunding bonds.

4118. Section 18. Severability.] If any Section, sentence, or clause of this Act is for any reason held invalid or to be unconstitutional, such decision shall not affect the validity of the remaining portions of this Act.

III. PROCEDURAL RULES AND GUIDELINES

A. GENERAL PROCEDURES

1. Meetings of the Commission shall convene alternately in Springfield and Chicago every other month beginning in January of each year. Special meetings may be called either by the Commission or by the Chairman, who shall specify the time and place, and shall direct the Staff Administrator to notify the members of the Commission.

2. All meetings of the Commission shall be open to the public and public notice shall appear in the official State newspaper as designated by the Secretary of State Office at least seven (7) days prior to the meeting.

3. The proceedings of the Commission meetings shall be conducted in accordance with Robert's Rules of Order, Revised, except as otherwise specified in these rules.

4. At the July meeting of the Commission in odd-numbered years, the Commission shall elect from its membership a Chairman, Vice Chairman, and Secretary. All committees shall be named by the Chairman. Standing Committees shall be: (1) Technical, (2) Legislative, (3) Intergovernmental, (4) Energy Conservation.

5. The regular order of business shall be:

   (a) Call to order.
   (b) Roll call.
   (c) Reading and correction of minutes.
   (d) Reading of special communications.
   (e) Briefing of proposals by Institute of Natural Resources.
   (f) Committee reports.
   (g) Commission and Legislative Staff Reports.
   (h) Other business.

6. The Institute of Natural Resources of the State of Illinois will keep the IERC apprised in advance as far as practical and possible of impending projects to be submitted for funding review and approval. When the IERC is formally submitted a project for review and approval, the methodology of review follows:

   (a) INR will submit in writing to the IERC, with sufficient copies for members and staff: (1) request for approval to be acted on within 45 days, (2) summary review of the project, and (3) a list of all related supplemental information, letters, proposals, etc., available to IERC and conditions of availability such as location, secrecy releases, etc.

(b) Upon receipt by the IERC copies will be forwarded to all Commission members to review information submitted by INR, and then forward written comments and/or questions to IERC Technical Committee.

(c) IERC Technical Committee will consolidate all questions and/or comments from IERC members; establish a meeting with INR and project proposer for discussion of technical merits and resolutions of IERC questions and comments; it will then prepare and submit to IERC members responses to questions and comments, including Technical Committee's findings and recommendations.

(d) IERC members will then discuss the project and arrive at a decision. INR will then be advised of the decision in writing within 45 days of the written request for approval of a project.

7. Minutes and recordings of meetings shall be on file at the Office of the Secretary of State, State Library, Document Section. Reports and studies conducted by the Commission relating to Commission activities specified in Illinois Revised Statutes, 1973, Chapter 93, Section 303, 1974 Annual Supplement, shall be completed and distributed.

8. It shall be the duty of the Executive Committee to audit annually the books of the Commission and make a report of their findings to the Commission. The Executive Committee shall consist of the Chairman, Vice Chairman, and Secretary of the Commission.

9. On March 15th, the Commission shall prepare a report of its proceedings and transactions. Such a report shall be drafted by the Staff Administrator and the Vice Chairman with the advice and approval of the Chairman of the Commission, and upon approval by the Chairman and the members of the Commission, the report shall be printed and distributed in accordance with the provisions of Rule 10.

10. All vouchers against the Commission shall be signed by the Chairman of the Commission and/or the Staff Administrator. A list of all vouchers processed shall be sent to the members of the Executive Committee quarterly.

11. The Commission shall disseminate relevant information to the public for purposes of consumer education and protection. Such information shall be disseminated by the Staff Administrator with the advice and approval of the Chairman of the Commission.

12. To study, review and coordinate proposed or ongoing energy programs of various State agencies, the Intergovernmental Committee shall hold meetings and evaluate such programs and report to the Illinois Energy Resources Commission its findings. Recommendations shall be forwarded to the General Assembly upon majority of Commission members present.

13. Requests for funding and/or endorsement of energy programs and/or proposals, other than coal related proposals, shall be in writing and should be directed to the IERC. State agencies requesting energy related funds and/or Commission endorsement should submit their proposals through the Intergovernmental Committee of the IERC.

14. The Chairman of the Commission or delegated employee may poll the members of the Commission by mail or by telephone to obtain their advice regarding decisions to be made by the Chairman on behalf of the Commission. Records shall be kept of those members' decisions at the Commission office.

15. All Commission members shall be provided with the following reimbursements:

    (a) Transportation:

        1. All transportation to be paid in full (air, train, etc.), or
        2. 15 cents per mile car allowance.

    (b) Actual expenses for lodging.

        Receipts are to be submitted with travel vouchers to support expenses claimed and/or maintained by Commission members for audit.

    (c) Meals:

        1. $13 per day.

    (d) Incidentals:

        1. $10 per day.

16. Commission employees and/or consultants when used by the IERC shall not exceed those allowed for legislative employees outlined by the Legislative Travel Control Board.

17. General Commission Administrative Office Procedures, such as personnel matters, coordinating various Commission tasks, etc. shall be the responsibility of the Staff Administrator of the Illinois Energy Resources Commission.

18. These rules may be adopted by a majority vote of the members of the Commission. Similarly, these rules may be amended, altered, or suspended by a majority vote of the members of the Commission.

B. GUIDELINES FOR REVIEW AND EVALUATION OF PROJECTS TO BE FUNDED UNDER PA 78-1122

These guidelines are categorized into three areas: (1) basis of review, (2) criteria for evaluation, and (3) methodology of review.

Basis of Review

Foundation of IERC review and decision functions are embodied in the Illinois Coal and Energy Development Bond Act and the Energy Resources Commission Act. The specific purposes are:

> Development of coal resources include research development, and demonstration of improved methods of discovery, production, transportation, sale, distribution, conversion, end-use and waste disposal of coal resources. (IL Rev. Stat. Ch. 96 1/2, par. 102.)
>
> Acquisition, development, construction, reconstruction, improvement, financing, architectural and technical planning and installation of capital facilities consisting of buildings, structures, durable equipment, and land for the purpose of capital development of coal resources. (IL Rev. Stat. Ch. 96 1/2, par. 107.)

Criteria for Evaluation

The criteria for evaluation are categorized into three areas of evaluation. The first is the project per se, the second is project applicability to funding requirements, and the third is project impact and/or national energy development.

PROJECT PER SE

This area of evaluation would attempt to ascertain whether the project per se is a sound project by questioning Technology, Reliability, Economy, and Social and Environmental effects.

Technological Evaluation

1. What is the project schedule and does it appear to be practical?

2. For a large project involving several interrelated systems:

   a. What are the separate systems?
   b. What are the systems that actually utilize Illinois coal?
   c. What is the relative importance of those systems that are not directly involved with the utilization of coal to the systems which are?

3. What percentage of the project may be classified as research and what percentage as development?

4. Does the project involve improving the efficiency of electric power generation? For example, conserving some form of our energy resources and/or other resources.

5. Is the time expected for commercial operation reasonable? Does it fit into the overall energy policy of the State and Nation?

6. What are the technical problems that need to be solved before the project is successful? Are these problems of technical or operation materials limitations, or of inadequate supporting research and data? Is there sufficient money requested to do the job? How close to the goal must a compromise be for the project to be successful? Is the staging from the laboratory model to the pilot model and to the commercial model reasonable to be done in the time period allotted?

7. What alternatives are open if the project will not succeed? Are there sufficient funds to support this new direction?

Reliability Evaluation

1. What are the experience and technical qualifications of participating companies in projects of this type?

2. Will all of the effort be by the participating companies or will any be subcontracted? If so, how much and to whom?

3. What are the experience and contemplated commitment of time of the specific team personnel representing the participating companies?

4. What is the project plan, and does it appear to be well organized?

Economic Evaluation

1. What is the project cost budget, its limitations, and its basis?

2. Which companies or organizations are a part of the project and what are the operational and financial relationships?

3. How is the project effort organized within each participating company functionally and financially?

4. How soon and to what extent will returns from this project be realized?

5. What are the engineering economics of the project, will it be competitive in the near future with currently existing processes?

Social and Environmental Evaluation

1. What effects will the project have on the surrounding community?

2. Does the project involve the environmentally acceptable use of high sulfur coal so prevalent in Illinois?

3. What are the stated and implied motivations of the participating organizations for the project?

PROJECT APPLICABILITY TO FUNDING CRITERIA

This area of evaluation should ascertain whether the project qualifies and to what extent for funding. Some of the questions to be determined are as follows:

1. Does the project meet the specific purposes contemplated by the Illinois Coal Development Bond Act?

2. How does the project specifically contribute to the development of Illinois coal resources?

3. Will the knowledge of operation and development of the project be public information or will some of it be retained as proprietary information?

4. What portion of the project effort is directly related to the development of high sulfur Illinois Coal?

5. Is the amount of funding requested from Illinois reasonably proportional to the total project and cost contribution by others?

6. Is the amount requested for funding for the specific project proportionate with a balanced distribution of the total available allocation under the Illinois Coal and Energy Bond Act to insure reasonable diversity of present and future projects?

PROJECT IMPACT ON ILLINOIS AND/OR NATIONAL ENERGY DEVELOPMENT AND ILLINOIS COAL RESOURCES

This area pertains to ascertaining the impact on Illinois and National Energy Development. Some questions in this area are as follows:

1. In what aspect will the project contribute to the Illinois and/or National Energy Development and independence?

2. Is the project redundant to other industry and/or government efforts?

3. How does the project's potential benefit to the National and/or Illinois Energy Development compare with current commercial energy developments in regard to:

   a. Schedule or timetable of application.
   b. Precited performance.
   c. Installation and operating costs.
   d. Technical feasibility.

Methodology of Review

The Institute of Natural Resources of the State of Illinois will attempt to keep the IERC apprised in advance as far as practical and possible of impending projects to be submitted for funding review and approval. When the IERC is formally submitted a project for review and approval, the methodology of review follows:

1. INR submits in writing to all IERC members:

   a. Request for approval to be acted on in 45 days.
   b. Summary review of the project.
   c. List of all related supplemental information, letters, proposals, etc., available to IERC and conditions of availability such as location, secrecy releases, etc.

2. Upon receipt IERC members may:

   a. Review information submitted by INR.
   b. Forward written comments and/or questions to IERC Technical Committee.

3. IERC Technical Committee will:

   a. Consolidate all questions and/or comments from IERC members.
   b. Establish meeting with INR and project proposer for discussion of technical merits and resolution of IERC questions and comments.
   c. Prepare and submit to IERC members responses to questions and comments, including Technical Committee's findings and recommendations.

4. IERC Meeting

   a. Discuss project and arrive at decision.
   b. Advise INR of decision in writing.

IV. FISCAL YEAR 79 OBJECTIVES

In the face of constantly increasing pressure to develop new technology for the efficient and environmentally safe production of energy, the Illinois Energy Resources Commission defined its objectives for FY 79 as follows:

A. In accordance with the legislative mandate of PA 78-1125 and PA 78-1122, to approve funding of up to $65 million through general obligation bonds and otherwise encourage support for viable projects for the conversion of Illinois coal into an economically sound and environmentally safe energy resource.

B. As mandated by PA 80-432, to authorize the sale of up to $5 million in general obligation bonds to fund research and development of alternative energy sources.

C. To update the 1977 IERC Study Panels' reports to provide a basis for the efficient coordination of energy research and development efforts throughout the state.

D. Using the data gathered by IERC study panels, committees, and task forces, to formulate a long-term comprehensive energy plan for Illinois.

E. To act as intergovernmental liaison in seeking out and coordinating both public and private sources of grant assistance for energy-related programs and alerting state, regional, and local governments to cost-sharing opportunities in such programs.

F. To increase public awareness of present and future energy requirements, problems to be faced in meeting the demand for energy, the need for energy conservation, and potential alternative sources of energy.

G. To provide members of the General Assembly with information and other types of support services, including research and technical studies, evaluation and review of proposed energy projects, development and review of energy-related legislation, and the regular distribution of current reports on the Illinois energy situation.

V. BACKGROUND

The 1973 Arab oil embargo served to dramatize the nation's growing dependence on foreign energy sources. Disturbed by the sudden dearth of available energy and the threat to the nation's economic well-being and security, Americans began to look at energy supply and demand. Pressure grew to institute new energy policies, develop new energy technologies and resources, and initiate more satisfactory energy conservation measures.

In 1974, PA 78-1125 was passed by the Illinois General Assembly and signed into law, establishing the Illinois Energy Resources Commission (IERC). The Commission was charged with coordinating the State's energy research and development efforts within the context of national policy and evolving a long-range comprehensive energy program for Illinois. It was also made immediately responsible for reviewing and approving proposals for the issuance of up to $70 million in bonds to fund coal development projects under PA 78-1125, the Illinois Coal Development Bond Act. (This Act was amended in 1977 to become the Illinois Coal and Energy Development Bond Act, and to provide for the issuance of up to $5 million in bonds of the $70 million total to fund development of alternative energy resources other than nuclear power.)

The vast bituminous coal reserves in Illinois, though high in sulfur content, hold promise as a major source of future energy. In accordance with its legislative mandate, the IERC has consistently emphasized the importance of developing means of utilizing Illinois coal that realize the ore's extraordinary potential as an energy source and eliminate the adverse environmental impact of its high sulfur content.

In view of the expressed need for a balanced and broad overview of the energy situation in Illinois, in 1975 the Commission held twelve public hearings to determine the nature and extent of energy resources, energy problems and related environmental concerns in the State. In attendance at these hearings were representatives from all sectors of the economy concerned with energy consumption, energy conservation, and environmental protection, including spokespersons for State and local governments, institutions of higher education, business and industry, and private and public research and development organizations, as well as interested members of the general public.

Then, in 1976, Study Panels were constituted to begin in-depth research on six specific aspects of energy development indicated to be of primary concern at the 1975 hearings: coal development, solar energy, solid waste and biomass energy, natural gas and petroleum, electric utilities, and energy conservation. Each Panel was composed of approximately twenty members with expertise in energy-related fields from federal, state, and local government; industry; agriculture; research institutes and institutions of higher education; national and state laboratories; and public and private organizations concerned with energy issues. The findings of these Panels were incorporated into formal reports and

submitted to the IERC in 1977. They constituted an important step along the path to a comprehensive, long-range energy plan for the State and served in addition as guidelines for action on the part of private and public institutions as well as for governmental regulations, resolutions, and legislation.

Recognizing the importance of formulating legislation to realize the recommendations of the study panels, in 1978 the IERC established seven legislative Task Forces to implement panel recommendations through the development of specific legislation and policy proposals: the Coal Utilization, Electric Utilities, Gasohol, Coal Recovery, Insulation, Clean Air Act, and Intergovernmental Task Forces. Central concerns of these Task Forces are listed below:

Coal Utilization	coal development and transportation
Electric Utilities	power plant siting
Insulation	quantity and quality of insulation available in the market, quality of installation, and consumer complaints
Coal Recovery	development of waste tailings from strip and underground mining operations as energy source
Gasohol	development of Gasohol as alternative fuel
Clean Air Act	the ramifications and implications for future use of Illinois coal of the decision by Commonwealth Edison to use western coal rather than Illinois coal at its Powerton Plant as a result of recent federal legislation
Intergovernmental	coordination and exchange of information among all State agencies and institutions to avoid duplication of effort and promote efficiency in energy programs and activities; review of impact of 1978 National Energy Act on energy programs and activities of said State agencies and institutions as related to above-stated coordination function

Due to the impact of the energy situation in Illinois of 1978 federal legislation, including the National Energy Act, Surface Mining Control and Reclamation Act, amendments to the Clean Air Act, and the Subsidence Insurance Bill, as well as the significance of new developments in energy research and technology, production, and conservation, the IERC requested the Study Panels to update their 1977 findings. With an anticipated completion date of Fall, 1979, these updated reports will revise the 1977 recommendations and establish new priorities for action. An executive summary of the revised reports will contain an updated statistical section.

Throughout its career of service to the Legislature and the State, the IERC has not only worked to develop and promote effective energy legislation and policy and support energy development, but also to make every effort to enhance public awareness of energy problems, policies, and programs. In 1978 these efforts have taken the form of Energy Outlook Meetings, presentations at the Illinois State Fair, regular reports to the General Assembly, and in-depth studies of special problems. With the formation of a Speakers Bureau in 1979-80, the Commission hopes to expand its capacity to discharge its responsibility for the dissemination of information on energy.

VI. COMMITTEES

A. EXECUTIVE COMMITTEE

Representative Joe E. Lucco, Chairman; Senator John J. Nimrod, Vice Chairman; Dr. James P. Hartnett, Secretary

Composed of the officers of the IERC, the Executive Committee guides the activities and establishes the basic direction of the Commission with the consent of the total membership. The Executive Committee acts with the full power and authority of the Commission except where major policy is affected or previous actions of the Commission are modified.

B. ALTERNATIVE ENERGY COMMITTEE

Representative Adeline J. Geo-Karis, Chairman

The Alternative Energy Committee studies, reviews, and makes recommendations to the full Commission on all proposals for the funding of alternative energy projects under the Illinois Coal and Energy Development Bond Act. The Act provides for support of up to $5 million for research, development, and production of alternative energy resources. The Alternative Energy Committee is also responsible for conveying all relevant information on alternative energy to the Legislative Committee for the development of legislation.

On the recommendation of this Committee, the IERC approved a recommendation for the use of $1.5 million of the $5 million total alternative energy bond funds available under the Illinois Coal and Energy Development Act for a study of high-potential alternative energy resources to be conducted by the Division of Energy (now INR). The study was intended to establish priorities and guidelines for evaluating alternative energy project funding proposals. Also at the Committee's direction a Gasohol Task Force was established and preparation of a report on the use and potential of "Gasohol" ® fuels in Illinois was begun. The report, Gasohol--The Fuel of The Future, contains a general introduction to the topic of alcohol fuels, a summary of "Gasohol" ® related legislation and legislative efforts in Illinois and on the Federal level, and recommendations for legislation.

C. COAL BOND COMMITTEE

Representative Richard Hart, Chairman

The Coal Bond Committee is primarily charged with evaluating and making recommendations to the full Commission on requests for State funding in coal development projects. Under the Illinois Coal and Energy Development Bond Act, up to $65,000,000 in bonds may be issued to support coal development projects approved by the Commission. The Coal Bond Committee is also responsible for providing the Legislative Committee with all information pertaining to coal development relevant to to the formulation of energy legislation.

D. ENERGY CONSERVATION COMMITTEE

Senator Gene Johns, Chairman

The Energy Conservation Committee gathers information on energy conservation, proposed conservation measures, and related topics to determine its applicability to the State of Illinois. It reviews appropriations of State funds for energy conservation projects and programs and promotes conservation practices in residential, commercial, industrial, transportational, and governmental sectors of the State. The Committee is further responsible for making recommendations to the Legislative Committee for the development of energy conservation legislation.

Concerned by the inability of the insulation industry to meet the heightened demand for insulation in 1978, this Committee recommended that the IERC investigate the problems faced by consumers wishing to obtain insulation for their homes, specifically the inadequate quantity and quality of insulation material available on the market. Two hearings were held, one in Springfield on April 10th, the other in Chicago on April 17th. Participants included representatives of the Illinois Office of the Attorney General; the Division of Energy, Department of Business and Economic Development; the U.S. DOE; the U.S. Department of Commerce; the Federal Trade Commission; and manufacturers, distributors, and installers.

E. ENERGY EDUCATION COMMITTEE

Representative Ralph Dunn, Chairman

The Education Committee collects and disseminates information on energy resources, problems, and programs for the education and protection of the general public, business and industry, local governments, and State agencies and institutions. The Committee also promotes energy awareness programs at State and regional levels and conveys relevant materials, studies, and recommendations to the Legislative Committee for the development of energy-related legislation.

The 1978 activities of the Committee were of a diverse nature. Tours of energy production facilities were arranged for IERC members and interested members of the 80th General Assembly. The 1978 Energy Education Tours included:

- Central Illinois Public Service Company's power plant in Newton.
- Illinois Power's generating plant at Wood River.
- Northern Illinois Gas Company's facility in Aurora.
- SolarFlame Systems, Inc. facility at LeRoy.
- General Electric's nuclear generating plant at Morris, Ill.

Additionally, a State Fair Energy Exhibit was organized, a series of four Energy Outlook Meetings were held in November and December, and plans were made to institute a Speakers Bureau (see Sections IX. B.2, 3, and 4).

F. LEGISLATIVE COMMITTEE

Senator Kenneth V. Buzbee, Chairman

Comprised of the legislative members of the IERC, this Committee is responsible for developing sound energy legislation for the State of Illinois and assessing all energy-related legislation in the House and Senate on the basis of Commission guidelines for energy policy. When possible, this Committee drafts amendments to inadequate energy legislation to make it consistent with Commission policy. In addition, it reviews energy-related legislation of other states and the federal government to determine its applicability in the State of Illinois.

With the assistance of the other Committees and the Commission's six Task Forces--Electric Utilities, Coal Wastes Recovery and Utilization, Insulation, Gasohol, Coal Development, and Intergovernmental--(see Section VIII) the Legislative Committee drew up a series of proposals for legislation to encourage the development and conservation of the State's energy resources. Proposals approved by the full Commission were then drafted and submitted to the 80th General Assembly for action. A summary of IERC sponsored and approved legislation appears in Section X.

G. ENERGY PLANNING COMMITTEE

Senator Robert W. Mitchler, Chairman

The Energy Planning Committee is charged with developing energy policy guidelines for the Commission. It monitors and makes recommendations relevant to the Five-Year Contingency Plan and the Energy Policy and Conservation Act submitted to the Federal Government by the Institute of Natural Resources. The Committee is also charged with conveying materials, studies, and recommendations pertinent to energy policy to the Legislative Committee for the development of legislation.

Members of the Energy Planning Committee met jointly with representatives of the newly formed Institute of Natural Resources to begin work on establishing an Illinois energy policy statement as a prelude to the formulation of a comprehensive energy plan for the State. The joint effort, headed by Eugene Voiland, IERC public member, is to set priorities in the development of Illinois's energy resources and devise guidelines for the harmonious integration of energy development with environmental control in Illinois. A legislative proposal to this effect will be introduced in the Spring 1979 Session of the 81st General Assembly.

H. TECHNICAL COMMITTEE

Senator John J. Nimrod, Chairman

The Technical Committee studies, evaluates, and makes recommendations concerning the technical content of funding requests received by the Commission. It represents the Commission on technical matters at State and national hearings and conferences and works jointly with the Institute

of Natural Resources in assessing the technical aspects of proposed coal development and alternative energy projects. The Committee also conveys relevant information and recommendations on the technical factors involved in energy development to the Legislative Committee for the development of legislation.

In consultation with the Institute of Natural Resources, the Technical Committee this year has participated in studying and reviewing for the Commission the following energy projects: Allis-Chalmers KILnGAS Coal Gasification Process; Powerton Gasification Combined Cycle Test Facility; AMOCO Oil Coal Liquids Refinery Facility; Illinois Coal Gasification Group; Combustion Engineering Fluidized-Bed Boiler Project; the CIPS Double Alkali FGD Process; and the Peck-Pircon FGD-Fertilizer Process.

I. INTERGOVERNMENTAL COMMITTEE

Representative Daniel M. Pierce, Chairman

The Intergovernmental Committee monitors the energy use, development, and conservation programs of State agencies, educational institutions, and local governments and makes recommendations on energy-related appropriations in State agency budgets. It acts to coordinate proposed and ongoing State programs that pertain to the solution of energy-related problems. The Committee also receives and conveys to the Commission requests for funds for and endorsement of energy-related programs. In addition, it provides information and makes recommendations to the Legislative Committee for the development of legislation.

The Intergovernmental Committee has focused its attention this year on the ramifications of the 1978 National Energy Act for the development of energy resources in Illinois. The Committee's primary concern has been to initiate the development of a coordinated response to the Act on the part of all state agencies and institutions through the Intergovernmental Task Force (see Section VIII).

VII. STUDY PANELS

A. BACKGROUND

In 1976, under the chairmanship of Senator John Nimrod, the IERC contracted with the University of Illinois Energy Resources Center, Chicago Circle Campus, to establish six Study Panels. Charged with making an extensive investigation of the major issues that had arisen at the Commissions's 1975 public hearings, the Study Panels were coordinated by Dr. James Hartnett and composed of approximately twenty specialists in energy-related fields from public and private sectors of the economy: federal, state, and local government; industry; agriculture; research institutes and institutions of higher education; national and state laboratories; and other organizations concerned with energy-related issues. Each of the six Panels analyzed available energy resources and technology and evaluated related problems, including supply, demand, and environmental concerns in the subject area assigned to it and submitted a detailed report including recommendations for action. These reports were presented to the Commission in 1977. A synopsis of their contents is contained in an executive summary report: Illinois' Energy Future.

As a result of 1977-78 Federal legislation, specifically the National Energy Act, the Surface Mining Control and Reclamation Act, amendments to the Clean Air Act, and the Subsidence Insurance Bill, a need arose to put the evolving energy picture in Illinois into sharper focus. At the instigation of Senator Nimrod, 1978 Chairman of the Commission's Technical Committee, the Study Panels have been requested to begin an update of their reports, including a reevaluation of earlier findings and new priorities for action as necessitated by changes in the Federal energy program. Completion of these revisions, along with a new executive summary containing a synopsis of all the updated reports and an updated statistical section, is anticipated in late 1979.

B. COAL

Jack A. Simon, Chairman

The Coal Study Panel compiled information on Illinois coal reserves, mining, quality, uses, and markets, in addition to developments affecting the value of Illinois coal as an energy source. Social impacts and environmental concerns related to the development of Illinois coal were also given consideration. Attention was focused primarily on problems and opportunities in the use of Illinois coal through 1985, although some observations were projected through 2000. The findings of this panel are reflected in the following list of recommendations:

Recommendations

1. Develop a long-range State policy on energy including conservation (within national context) which includes the orderly growth of all aspects of the coal industry in addition to growth of all other present and future energy sources. It is recommended that programs be developed which will consider all aspects of meeting State needs, including mineral development, agriculture, urban expansion, surface and underground mining, highways, preservation of natural areas, major industrial and commercial plant siting, etc.

2. It is imperative that, to a greater degree than in the past, there be consideration of economic and technical feasibility in formulating State regulations relating to coal, and that there be more analysis of costs and benefits resulting from such regulations. The social and economic impact of regulation on factors such as coal imports and exports, air and water quality, surface mine reclamation, stack gas cleaning and other control technology, coal conversion plant costs, siting, subsidence control, and tax policy be examined.

3. It is recommended that the State continue the policy of attracting demonstration projects for coal utilization and the Panel endorses broadened emphasis for State support of technological developments such as fluidized bed combustion, form coke, coal chemicals, and coal desulfurization that can permit more general use of Illinois coals while meeting adequate environmental requirements.

4. Due to long lead times required for the design and construction of energy facilities, even if various approvals are expeditiously obtained, the importance of eliminating unnecessary delays is critical. It is recommended that procedures be developed to provide a mechanism on State and local levels for expediting permit and related procedures for energy facility construction while assuring adequate citizen involvement and review consistent with other aspects of major concerns of the State. The possibility of State assistance to assure more expeditious review and approval from national agencies should be explored. It is further recommended that a study be made of strategies for possible early citizen involvement.

5. It is recommended that the State establish mechanisms for support of expanded research, which, in coordination with federal research programs, might lead to economic use of the high-sulfur coals typical of the bulk of Illinois coal reserves.

6. It is recommended that there be a review of all aspects of water law and the need for large long-term assured supplies of water for coal conversion facilities. It is desirable for the State to take action to assure that development of such facilities may proceed while assuring adequate supplies for other vital water uses in the State.

7. The Illinois Institute of Environmental Quality (IIEQ) should continue the policy of funding studies of the environmental and health impacts of any new coal conversion project. The study should include monitoring air and water quality and the possible effects on workers and nearby residents.

8. Review of possible State actions that will improve and develop the transportation systems essential to expanded coal production is recommended. These possible actions include upgrading of railroad beds and equipment and river transportation facilities. Impact on other than energy requirements should be examined also.

9. Residents of Illinois have no opportunity to obtain a traditional mining engineering degree within the State. It is recommended that a study be undertaken of the need for such a program to ensure future adequate availability of mining engineers in Illinois. Expansion of present support, by the State, to meet education needs for miners and technical personnel should also be examined.

C. ELECTRIC UTILITIES

Robert J. Podlasek, Chairman

The concerns of the Electric Utilities Study Panel were twofold: the generation of electricity (1) through the use of fossil fuels and (2) through nuclear power. To better discharge its responsibilities in these areas, the panel formed five Subpanels to investigate (1) electrical load forecasting, (2) effects of environmental regulations, (3) financial requirements, (4) nuclear power options, and (5) one-stop siting for energy conversion facilities. Due to the extremely controversial nature of the issues confronting the Subpanels, members were not always able to come to consensus in formulating responses to them. Agreement was reached, however, on the points specified in the recommendations categorized below according to the Subpanel where they originated. An asterisk indicates top priority.

Recommendations

Electrical Load Forecasts

Forecasts made by electrical utilities within the State should be used as the basis for any statement about the future growth rate of peak demand in Illinois. The forecasts of electrical utilities that are reported annually to the Federal Power Commission on Schedule 5, FPC Form 12E-2, page 7, should therefore be used for load forecasts for the State.

Environmental Regulations

1. Air and water pollution should be controlled to protect the public health and welfare. Some pollution control regulations promulgated to maintain a satisfactory environment are invariably too restrictive; others are not strict enough. Accordingly, the legislature should emphasize cost-effective environmental regulations.

2. The reclassification of a significant number of class II areas to class I would preclude the construction of any new fossil-fueled electrical generating facilities. The Legislature should therefore require clear and convincing evidence that proposed reclassifications are in the best interest of the entire State.

3. The desirability of utilizing Illinois coal to the fullest possible extent should be considered in the promulgation of any environmental regulation.

Financial Considerations

*1. Rapid write-off of all pollution control equipment should be permitted.

*2. Either the authorized amounts of pollution control bonds issued by the Illinois Pollution Control Financing Authority (IPCFA) should be increased or statutes limiting the application of IPCFA financing to the amount of bonds outstanding, rather than to the amount that has been issued, should be amended.

*3. The procedure by which a company obtains pollution control funding should be streamlined by allowing loan agreements. The steps involved are summarized below:

> Application for a specific amount of bonds; review of application and the company's financial statements and past environmental practices; public hearings; and a resolution that authorizes issuance of the bonds, states the agreements under which they are issued, and identifies the facilities for which they are intended.
>
> Issuance of bonds to the public and deposition of money in a construction fund account held by a trustee. The company makes adequate provisions for payment of the bonds by issuing trustee mirror bonds (first mortgage notes with the same provisions as the bonds issued by the IPCFA). The title to the facility passes to the trustee; the company pays the interest and principal to the trustee who in turn gives the money to the IPCFA for payment to the bondholders. The trustee gives money to the company on an as-needed basis.

When pollution control bonds are issued through the local government, a loan agreement is made between the company and the local unit. The company promises to cover the interest and payments on the principal for the bonds; first mortgage bonds are thus not issued to a trustee.

A statutory limit restricts the amount of bonds issued regardless of the amount outstanding. A local governing unit can issue low-cost short-term pollution control debt to finance construction as it progresses and later roll it over with long-term pollution control bonds. With this method, the outstanding amount does not increase. The wording of statutes pertaining to the IPCFA means that twice the amount authorized would have been issued, and the outstanding balance would remain unchanged. The amount of pollution control bonds issued by the IPCFA without legislative change is limited, but amounts exceeding the limit have already been authorized; thus a new upper limit should be considered.

Nuclear Power

1. The State should either consolidate the regulatory authority over electrical generating facilities into one State agency or review and redefine the authority of the agencies presently involved to eliminate duplication and overlapping jurisdiction.

2. The capabilities and authority of State agencies should be made to conform to federal requirements. This would allow the federal government to delegate to the State various environmental and energy programs, thereby eliminating duplicate requirements. State programs do not presently conform to Federal requirements with regard to the National Pollutant Discharge Elimination System permit authority under the Federal Water Pollution Control Act, authority under the Clean Air Act, transportation of hazardous materials, and protective action guides.

3. Efforts should be made to consolidate State and Federal hearing processes. An example is the Memorandum of Agreement between the NRC and the State of New York, which provides for joint environmental hearings.

4. The Public Utilities Act should be amended to clarify that the ICC Certificate of Necessity and Convenience is valid so long as the utility continues in its efforts to obtain all required State and Federal approvals for the construction of a facility and for a reasonable period thereafter.

One Stop Siting

1. The Governor and the State Legislature should appoint a committee to study the need for siting legislation in Illinois and to explore the factors--economic, technical, environmental, administrative, and legal--affecting the siting of energy conversion facilities.

2. An overview should be made of the role of siting and licensing in the overall process of planning, constructing, and operating an energy conversion facility.

3. The following should be studied: siting factors and criteria, causes of delay in issuing license, procedures to expedite licensing, and specific legislative proposals to eliminate duplication of unnecessary action in the entire process.

4. The value of dedicating specific land for energy conversion facilities should be evaluated in view of the public interest.

D. ENERGY CONSERVATION

David L. Grumman, Chairman

As defined by the Energy Conservation Panel, the term conservation refers to improvement in efficiency rather than curtailment of utilization of depletable energy resources. Thus this Panel directed its attention specifically to technological, economic, environmental, and social measures for extending State energy resource supplies. In order to take the most direct and effective approach, the Panel divided itself into six Subpanels, each of which examined the subject of energy conservation with regard to one of the following topics: (1) commercial and institutional buildings, (2) residential buildings, (3) urban development, (4) industry, (5) agriculture, and (6) transportation.

The data and information gathered by these Subpanels form the basis of the recommendations listed below. Classified according to the type of action necessary for their implementation--administrative (A), educational/promotional (E), legislative (L), and research (R)--these recommendations pertain to three different time ranges: near-term (present to 1985), mid-term (from 1985 to 2000), and long-term (beyond 2000). Again, asterisks note top priority recommendations.

Recommendations

Commercial and Institutional Buildings

Near-term

1. State-controlled buildings

*Energy conservation programs, including professional analyses to recommend those measures having favorable payback, should be implemented; State funds should be used proportionate to operating costs. (L,A)

Programs that provide for periodic spotchecks of operating and maintenance procedures and certification of procedures by licensed professionals should be established. (L)

*Energy management training sessions for personnel involved in operating buildings should be initiated. (E)

2. Other than State-controlled buildings

*Programs similar to those for State-controlled buildings should be encouraged through a promotional campaign and through incentives for both professional analyses and for meeting program implementation costs. (A,E)

Periodic checks of operating and maintenance procedures should be required. (A)

*3. Provisions of existing building codes that encourage excessive energy use should be modified. (L,A)

*4. Educational and training programs directed toward owners. managers, and operators of buildings should be undertaken. (E)

5. Energy management training should be included in the curriculum and examination of persons wishing to qualify as building operators, where licensing procedures exist. (L)

6. A promotional campaign aimed at informing the public on energy matters should be initiated. (E)

Mid-term

*1. Numerical performance standards for target energy consumption in existing buildings should be developed as well as methods for assessing compliance. Data from representative buildings should be used to establish reasonable targets. ASHRAE (American Society of Heating, Refrigerating, and Air Conditioning Engineers) Standard 100 should be used as a nonmandatory guideline. (R)

*2. Standards should be made mandatory for State buildings; economic incentives should be provided for other buildings. (L,A,E)

*3. Deregulation of the price of fuel should be advocated; but special needs of low-income groups and the elderly should be considered. (E)

4. Fast tax depreciation rates now allowed for new construction should be removed, with the possible exception of construction that is energy conserving. (E)

5. Utilities should be encouraged to include weather-corrected energy consumption data from the previous year on statements to customers. (A)

6. Courses in energy use and management should be established at all educational levels. (A,E)

Long-term

1. New building design

   *ASHRAE Standard 90-75 and HUD (Housing and Urban Development) Minimum Property Standards (MPS) should be adopted as mandatory, interim energy conservation standards for inclusion in building codes. (L)

   *Numerical performance standards for target energy consumption and a method for assessing compliance should be developed, using the ASHRAE and HUD standards as guides. Availability and environmental acceptability of raw energy forms should be taken into account--that is, ASHRAE'S RIF (Resource Impact Factor) concept. (R)

   *Performance standards should be implemented; the mandatory prescriptive standard should then become a guideline; and economic incentives should be provided to encourage compliance. (L,E)

*2. A policy requiring life cycle costs, rather than construction costs, as the main economic criteria should be established for decisions involving state construction. (L)

*3. Professional and certified energy and economic life cycle cost analysis should be required for any new State-funded building larger than a specified size. (L,A)

*4. Funds should be provided for life cycle cost analyses and other initial costs that might be involved in energy conscious building designs. (L)

Residential Buildings

Near-term

1. The State should support a study that will provide a detailed inventory of the energy use characteristics of single family dwellings in Illinois. Such a study would expand the results of two recently completed housing surveys: "State of Illinois Housing Needs--1975," Illinois Housing Development Authority; and "Energy Usage Characteristics of Single Family Residences and Their Occupants in Illinois," Illinois Department of Business and Economic Development, Division of Energy. The study would also expand the ongoing studies of the Small Homes Council and serve as a starting point for developing a program for retrofitting homes with insulation and for controlling infiltration. (L,R)

2. The State should support a study in which three single family units would be used. Two older homes and one new house should be acquired by the State, in order to demonstrate practical energy conservation measures for houses in Illinois. (L,E,R)

*3. The State should either develop or consider adopting an existing design and performance standard for residential buildings. The standard would be based on the concept of maximum envelope tightness and would utilize the results of the studies suggested above.

Where mechanical ventilation is used, fresh air should be supplied at the rate of 5 ft^3 per minute per occupant. (L,A)

Air lock entries (vestibules), not now common in Illinois residences, should be encouraged to replace storm doors. (L,A)

Excessive infiltration in windows should be stopped by eliminating cracks and using storm windows, weather stripping, and good carpentry refitting. (L,A)

Control of infiltration through foundation cracks, eaves, cornices, and siding should be part of the program. (L,A)

*4. Pending the completion of the studies recommended above, the State should adopt the 1975 HUD-MPS as a guide for retrofitting. (L)

5. The State should provide economic incentives for homeowners--possibly through tax credits or direct rebates--who achieve the energy performance standards developed above. (L,A)

6. The State should adopt, as a guideline, the HUD Standard for the sizing of hot water heaters. (L,A)

7. The State should promote the use of household appliances and fixtures that use the least hot water. (E)

*8. The State should develop or consider a proposed Federal Energy Administration program to improve the combustion efficiency of home heating equipment. This program should include information about the proper sizing and maintenance of furnaces and ways to minimize between-cycle flue losses--for example, by installing automatic flue dampers for interrupted combustion cycle furnaces or properly sizing flue orifices. Burner rate (orifice size) should be adjusted to maintain an optimum off-on cycle. Heat exchange surfaces or burners should be replaced or repaired. In addition, flue-gas temperature and carbon dioxide from residential furnaces should be monitored yearly to determine efficiency levels. (L,A)

Mid- and long-term

1. The State should adopt the 1975 HUD-MPS insulation standards for new buildings. (L,A)

2. The State should adopt a design and performance standard for new buildings based on the concept of maximum envelope tightness. (L,A)

Urban Development

Near-term

1. Excessive use of automobiles should be discouraged through increased State taxes on gasoline and higher license fees. However, low-income groups and other disadvantaged individuals should not bear a disproportionate share of the burden created by these actions. Public transportation should be encouraged and supported. (L)

2. Existing buildings, neighborhoods, towns, and cities should be preserved and rehabilitated if necessary. Redevelopment should take place near existing public transportation. An urban homesteading act should be adopted to encourage revitalization of existing homes and neighborhoods. (L)

3. Inner-city areas that have deteriorated should be rebuilt. Such areas should be purchased with public funds, cleared, and resold to private developers. Block grants from the Federal Community Development Act should be used. Incentives should be provided for private interest. (L,A)

4. Old and new suburban areas should be revitalized with mixed employment opportunities and housing options.

   Areas in need of improvement should be redeveloped to achieve a better balance of employment opportunities. (A,E)

   The best commercial areas and residential neighborhoods should be preserved through revisions in zoning ordinances by local governments. The Illinois Department of Business and Economic Development should encourage such revisions. (A,E)

Mid-term

1. The natural environment should be preserved and natural resources conserved by prohibiting development where transportation and utilities do not exist. (L,A)

2. Existing commercial strips should be redeveloped to higher density. Marginal operations in one-story buildings should be replaced by shops, services, offices, community facilities, and high-density housing. (L,A)

3. Growth of small towns should be encouraged. Some towns of 5,000 to 10,000 could grow to 20,000 without significantly harming the environment. Much of the growth could occur within already established town limits. Many smaller cities in Illinois could grow without creating urban sprawl, which is not energy efficient. (L,A,E)

4. New buildings and communities should be attuned to the environment--e.g., wind, the influence of landscaping, orientation of buildings to best utilize light and heat from the sun. State building designs should incorporate such features as examples. (L,E,R)

5. Research into the utilization of solar energy should be encouraged because it will eventually become an important energy source. (L,E,R)

Industry

Near-term

1. The State should encourage the Federal Government to revise the Federal Revenue Code so that industry can rapidly depreciate energy-conserving equipment. Such rates are presently allowed for environmental control equipment. (L,E)

2. The State should provide an incentive, through tax credits, to industries that purchase energy-conserving equipment. (L,A)

*3. The State should require retail outlets that sell motor oil to provide storage of used oil and to assure that oil is returned to a re-refiner. (L,A)

*4. The State should encourage--perhaps through consulting services or public information programs--industrial users of motor oil to return used oil for re-refining. (L,A,E)

*5. The State should prescribe standards, based on performance characteristics, for oils sold in the State. (L,A,R)

6. State restrictions concerning joint construction and operation of electric power generating facilities should be reviewed. (L,R)

7. The State should support research and development of fluidized-bed combustion of coal for electric power generation on a small scale. The process would be designed for generation of electricity and waste heat at a moderate- to large-size industrial firm. (L,R)

8. The State should provide free consultation pertaining to small businesses to implement energy conservation programs; included in the program would be insulation, adjustment of work schedules, changes in lighting levels, and pooling of transportation to and from work. (L,A)

9. The State should provide professional consultation to industrial firms and businesses concerning the problems of re-refining lubricating oils and cogenerating electricity. (L,A)

*10. The State should be required to consider energy conservation when it purchases goods. (L)

*11. The Secretary of State and the Department of General Services should be required to provide for the economic recovery of waste paper from State offices and agencies. (L,A)

*12. Consumers could make more informed choices if appliance labels clearly indicated energy requirements and costs. Appliance labels (consistent with Federal labeling procedures) could display the energy input required per unit of output and the expected annual cost. (L)

13. A durability tax that reflects the operating life of appliances should be levied. (L)

14. The recycling of all materials should be encouraged by the State as a way of conserving energy and mineral resources. (L)

15. Pollution control bond money should be used to support industrial development of in-house or local solid waste separation and combustion for process or space heat. (L)

Agriculture

Near-term

*1. Funds should be provided for research projects to improve fertilizer efficiency. (L,R)

2. Funds should be given to the Cooperative Extension Service to broaden and strengthen educational programs having to do with solar drying, reduced tillage, and tractor efficiency. (L,R)

Mid-term

1. Taxes on land used for agriculture should be based on such use. (L)

2. Impractical constraints and regulations that require energy, but are not relevant to health and the environment, should be opposed. (L)

*3. Funds should be provided for research into drying corn with energy from corn cobs; developing more efficient plants; determining factors favoring high yield; and improving control of diseases, weeds, and insects. (L,R)

4. Barriers should be removed from and incentives provided for agriculture because of the essential nature of food. In any allocation of energy, farmers and agribusinesses must receive priority for fertilizers and other chemicals, seed, and fossil fuels. Timely delivery of such materials must be assured. (L,A)

Long-term

*1. A transportation system that reflected the costs involved in agricultural products should be developed. (L,R)

*2. Funds for research to improve photosynthetic efficiency of plants should be provided. (R)

Transportation

Near-term

*1. The General Assembly of Illinois should pass legislation pertaining to programs mandated by the 1975 Energy Policy and Conservation Act.

Vehicles carrying fewer than 16 passengers should be classified as Division One in the Vehicle Code. (L)

The State should support a study of the effects of amending the Public Utilities Act to exempt vanpool operations from regulation and simultaneously require operators to certify to the Illinois Commerce Commission that they will meet minimum insurance requirements. (R)

If results of the study described above indicate that exemption and certification are feasible, the Public Utilities Act should be amended. (L,A)

*2. The State can offer companies and individuals various incentives to encourage vanpools.

Tax relief, which could include credits, could be provided for vanpool operations. (L)

Government-guaranteed insurance coverage should be provided for vanpool operations. (L)

Group ride vehicles should have city parking facilities. (A,L)

Vanpool operators should have park-and-ride facilities and special express lanes. (L,A)

*3. A public information and promotional program that encourages transportation users in Illinois to conserve energy should be developed. For example, motor carriers should be informed about the cost benefits of both regular inspections of their engines and improvement of the aerodynamics of rigs. The same technique should be used to encourage the use of radial tires, mass transit for commuting, and intercity rail transportation. (L,A,E)

4. The Illinois School Code should be amended to include driver education techniques that will conserve energy. Private companies should be required to teach energy conservation to all new drivers. The "Rules of the Road" should be amended to include energy conservation directives. Examinations for a driver's license should include questions regarding energy conservation. The principles of conservation in transportation should be taught at the elementary, secondary, and higher educational levels. (L)

5. The State should purchase, whenever feasible, smaller and more energy-efficient vehicles. (L,A)

Mid-term

*1. Energy conservation criteria should be developed and used during planning in all sectors of the transportation system, including the location of intercity piggyback freight facilities independent of regular switching yards; intercity fast freights; and relocation of rail passenger stations and right-of-ways separate from rail freight stations and right-of-ways. (L)

E. NATURAL GAS AND PETROLEUM

J. Cordell Moore, Chairman

It was the task of the Natural Gas and Petroleum Panel to assess means by which the U.S. and particularly the State of Illinois could lessen its dependence on imported oil. Possibilities for achieving greater energy independence on which this Panel focused included State legislation, incentives for development of energy resources in the State, and technological research and development. Two Subpanels were formed: one to address the problem of demand for petroleum and natural gas, the other to examine the available supply. Their findings were used to formulate the recommendations listed below. All the recommendations apply to the period from the present to 1985. Those given top priority are marked with an asterisk.

Recommendations

*1. The State should support the Federal Government in actions that will increase exploration for and development of domestic oil and natural gas supplies.

The State should support the Federal policy for phased decontrol of domestic oil prices-stipulated in the Energy Policy and Conservation Act of 1975.

Prices for new natural gas should be decontrolled; if decontrol is not possible, costs should be equivalent to the price of oil on the basis of Btu content. Prices should be permitted to increase in phases, and an index should be used. Natural gas prices equivalent to $11 for a barrel of oil would approximate $1.90 per million ft^3 for natural gas.

The Federal Power Commission (FPC) should continue to encourage funding of exploration and development via the advance payments concept; sums that are advanced should be included in an authorized rate base.

Obstacles to exploration for gas and oil should be removed; such as disallowing tax credits for intangible expenses. Vertical or horizontal divestiture should be discouraged.

*2. Illinois should express to the Federal Government its position that pipeline routes for Alaskan (and possibly Canadian) natural gas should be constructed to deliver gas to the Midwest and East; Illinois should urge other midwestern states to express this position.

*3. Illinois should oppose any Federal program for the reallocation of natural gas--both gas brought into the State by Illinois utilities and gas manufactured within the State by Illinois utilities--to other states except in a national emergency. Consumers and utilities within the State have already paid for reliable supplies and should not be penalized.

*4. Illinois should oppose any plan for diversion of Alaskan oil to any area other than the Midwest and East unless an alternate source is made available to the State.

*5. Illinois should support Federal legislation regarding a synthetic fuels loan guaranty program that includes coal gasification.

*6. Illinois should continue to provide funds for the development of synthetic fuels from coal, possibly in a manner similar to the Coal Development Bond Act or in the form of loan guarantees.

7. Illinois should move aggressively to increase the efficiency of energy utilization and to eliminate waste. Appropriate conservation measures--e.g., adoption of residential-commercial, and industrial retrofit measures, practical code requirements for new construction--and economic incentives should be implemented as rapidly as possible.

8. The Illinois Commerce Commission should cooperate with the National Association of Regulatory and Utility Commissioners in assuming a more active role in proceedings before regulatory commissions--particularly the FPC--in order to protect the interests of Illinois. Additional funding will be necessary.

9. Illinois should recommend to the Federal government that restrictions should not be placed on imports of liquefied natural gas (LNG).

F. SOLID WASTE AND BIOMASS

Harold L. Koenig, Chairman

The Solid Waste and Biomass Study Panel was directed to investigate programs, problems, and technical developments affecting the extent to which solid waste and biomass can be converted to fuel. Listed below are the recommendations submitted to the Commission for legislative action and educational and research programs to further the development of solid waste and biomass as energy sources. The recommendations are classed according to the time span to which they apply; near-term (present to 1985), mid-term (from 1985 to 2000), and long-term (beyond 2000). Top priority items are designated by asterisks.

Recommendations

Legislation

Near-term

*1. Illinois should comply with the provisions of Public Law 94-580 by preparing and implementing a state waste management plan.

*2. An appropriate State agency should be given the responsibility for coordinating the investigation and development of the recovery of energy from the solid waste and biomass resources within the State.

*3. The "Resource Recovery Facilities Guidelines" given in the September 21, 1976, Federal Register should be implemented at appropriate State installations. In general, these guidelines require that Federal installations establish or utilize facilities to recover materials, energy, or both from solid waste generated at the installation. All State units, whenever possible, should be required to use recycled and recovered materials; otherwise, nonrecyclable materials suitable for utilization as an energy source--such as combustible or biodegradable packaging materials, rather than plastic ones--should be used.

*4. The State should enact a program and pass legislation as needed--with appropriate incentives--to encourage the separation of ferrous metal, glass, aluminum, and other recoverable fractions from combustible wastes in any facility that processes solid waste into fuel.

*5. Funds from the Illinois Anti-Pollution Bond Act should be made available for full-scale solid waste demonstration projects at the local, regional, or State level.

Long-term

*1. The State, in conjunction with appropriate Federal programs, should provide suitable funds to permit the State coordination agency to initiate biomass research and planning.

2. Any legislative program that addresses the production of biomass in quantities required to produce significant amounts of energy for Illinois must consider competitive land use requirements. Therefore, any legislative action must be coordinated with agriculture and other potential land use interests.

Research

Mid-term

*1. Illinois should investigate and develop solid waste and biomass as energy sources. Priorities should be established for the research needs listed below. Effective allocation of research funds would therefore be based on the particular needs and potential energy resources of the State. It is possible that technologies developed for the production of energy from solid waste might also be applicable to producing energy from biomass.

Additional research is needed on the hydrogenation process by which solid wastes and biomass are converted to synthetic fuels (synfuels).

More efficient processes are needed for cellulose hydrolysis. Methods should be developed to break the cellulose-lignin complex so that the yield of fermentable carbohydrate could be increased.

The alcohol yield per ton of appropriate raw material is relatively low. Techniques for improving this yield are needed to reduce costs.

A limitation of anaerobic digestion processes for methane production is their low efficiency. Research is needed to identify raw materials with high conversion efficiencies and to improve those of existing raw materials.

Detailed net energy analyses of integrated energy-producing systems are required. Those with the highest ratio of salable products produced to energy consumed should be developed and used commercially.

Economic analyses of integrated synfuel and energy-producing systems should be performed and compared. The most economical systems should be developed and used commercially.

Existing data concerned with energy recovery processes should be reviewed. The information should be used to establish the cost/benefit ratios of specific processes for transforming agricultural wastes into fuels.

Research is needed on the technological aspects of collecting the methane gas generated by the decomposition of wastes in existing landfills.

2. After new or improved processes have been sucessfully demonstrated, waste-to-energy plants should be designed, constructed, and operated in Illinois.

3. The information available from the Resource Conservation and Recovery Panels should be fully utilized. The panels were established under Public Law 94-580 to assist State and local governments in solid waste management, resource recovery, and resource conservation.

Long-term

*1. Biomass species that can generate the highest percentage of recoverable energy should be identified. The efficiency of utilization of solar energy by these species should then be increased.

2. The feasibility of establishing biomass crops on state-owned or state-controlled lands should be investigated.

Education

Near-term

*1. The State should develop and implement an educational program for municipalities on the use of solid waste as fuel. The program should emphasize cooperation among all levels of government and private industry. Such a program would facilitate the establishment of energy recovery systems because financial benefits and risks would be shared. The program should also encourage cooperation between municipalities and private scavenger services with regard to the operation of solid waste processing facilities.

2. The State coordination agency should assist local governments and encourage them to sponsor public presentations, provide information about appropriate bond issues, and prepare brochures and other printed material for use in energy-related curricula at all educational levels.

3. The State should make maximum use of the expertise of State agencies, universities, and colleges in conducting energy-related solid waste and biomass research and demonstration projects.

Mid-term

1. The State should encourage and take the lead in the dissemination of information on using solid waste as an energy source. Students in city planning, engineering, and related disciplines should be made aware of the potential of solid waste as an energy source and the effects of solid waste utilization. The State should also disseminate information about the possible uses of biomass to students in botany, agronomy, agricultural engineering, and related disciplines, so that they are aware of the implications of biomass utilization and research.

2. A continuing educational program should be developed to transfer results of research studies to biomass producers and energy users. The Agricultural Extension Service could play an important role in transferring information to the producer; i.e., the agricultural community. A means for transferring research information to the users will have to be developed.

G. SOLAR ENERGY

Walter L. Borst, Chairman; S. H. Butt, Cochairman

Assigned the responsibility for examining the potential for the use of solar energy in the State, the Solar Energy Study Panel concentrated on low-temperature applications--the collection and utilization of solar energy below 200° F--and specialized applications for wind energy. Specifically, the types of solar energy technology studied by the Panel were: water heating for residential and other uses, winter space heating using active collection methods, space heating and process heat requirements in agriculture, heating and cooling of buildings by passive solar technology, and wind energy. Applications of solar energy omitted from consideration were felt to be impractical from a cost-effective standpoint.

The recommendations of this Study Panel are listed below. They are divided into two categories: (1) those requiring further research and (2) those able to be implemented immediately. Within each category priorities were assigned on a numerical scale with 1 representing the highest priority, 4 the lowest.

Recommendations for Further Study and Investigation

Priority 1

We recommend that the State of Illinois:

1. Support a comprehensive study of the effect of various applications of solar energy on the utility industry. Such a study should include a survey of all State utilities to ascertain the present applicable rates for supplemental energy for solar installations. A comprehensive study of this type will provide the basis for a fair and equitable rate structure.

2. In conjunction with utilities, conduct studies intended to develop solar system design criteria which will ensure that solar systems constructed in accordance with the criteria will have minimal adverse impact upon electric utility peak demand, thus implying that the solar systems so designed would limit added peak demand. In conjunction with this study, special "load management" electric and other utility rate schedules should be studied. Solar systems include energy storage capability which can be used to both store solar-thermal energy and store auxiliary energy. Through proper design and operation, it is believed that these systems can be used in such a manner that the input of auxiliary energy is required only at off-peak times. How may this be accomplished? Should "load management" rates be provided to solar users who follow appropriate design and operating criteria, such that auxiliary demand is managed and occurs only at off-peak periods?

3. Conduct a comprehensive market penetration analysis for solar applications in Illinois in the following categories:

   a. In the residential sector, specific characteristics, such as financial patterns, ownership patterns, patterns of public exposure, and building types should be identified which will lend themselves to the cost-effective use of solar energy.

   b. In the commercial sector, specific characteristics of commercial buildings which will lend themselves to the early cost-effective use of solar energy should be identified.

   c. In the industrial sector, specific industrial processes should be identified in which solar energy can potentially make a cost-effective contribution.

   d. In the agricultural sector, the specific characteristics of agricultural production should be identified which will lend themselves to early cost-effective use of solar energy.

4. Prepare a comprehensive study of existing energy-related building design criteria and practices to determine what modifications may be desirable to permit and encourage the passive use of solar energy.

Priority 2

We recommend that the State of Illinois:

1. Investigate the existing studies of individual solar rights. Other legal aspects of solar energy utilization, such as safeguards for the collectors and protection of the public health, safety, and welfare also need to be investigated.

2. Investigate the concept that utilities may provide solar customers with services such as design, installation, financing, leasing, and maintenance of equipment for solar energy applications. Participation by utilities in one or more aspects of the solar business as enumerated above, directly or through subsidiaries, is a potential business opportunity for them. Utility participation may accelerate the growth of use of solar energy. Should utility participation be permitted? Under what conditions? To what extent? Is it feasible? What changes in existing legislation or regulatory practices would be required?

Priority 3

We recommend that the State of Illinois:

1. Investigate the concept that utilities may finance solar applications in place of financing energy production from depletable energy sources. Should utilities be permitted or encouraged to finance solar facilities to produce thermal energy to serve a load in lieu of financing conventional generating capacity to serve the same load? Should utilities be permitted to "roll in" solar capital costs in their rate base? Alternatively, should they be required to handle such enterprises as a separate business? If the latter, upon what regulatory basis?

2. Conduct a study of the economic potential for wind energy use in Illinois.

Priority 4

We recommend that the State of Illinois:

1. Monitor and pursue the applicability of future solar energy technology beyond the near-term, to which the above recommendations are directed.

2. Support periodic studies to determine and report the effectiveness of passive solar energy utilization in buildings.

Other Recommendations

Priority 1

We recommend that the State of Illinois:

1. Support pilot solar technician training program intended for presentation by community colleges and other educational institutions. Two types of programs are envisioned:

    a. Short courses to provide exposure to the general principles of solar heating, solar domestic hot water and solar cooling aimed at contractor, installation personnel and builders.

    b. More detailed courses to be offered as electives in two year courses of study for technicians.

2. Support a professional education program for builders, developers, architects, engineers, contractors and lending institutions, concerning the present state of technology and current and projected solar economics.

3. Provide incentives for early development of solar energy applications. These could be financial incentives, to individuals and/or institutions, applied over limited periods of time until the cost-effectiveness of solar energy applications is established. Such incentives should cover "passive" solar energy utilization and conservation as well as "active" solar utilization.

4. Design its solar program so as to derive the maximum benefit from various federal programs, such as the ones originating from ERDA, HUD, etc. In particular, the state program should not be incompatible with the various federal programs.

5. In the interim (until a comprehensive study is completed) recommend that the Illinois Commerce Commission approve the application of "all electric" or gas space-heating rates for supplemental energy for solar installations.

6. Provide public access to operational solar energy demonstration systems which demonstrate the applicability of solar energy for residential, commercial, agricultural, and industrial purposes.

7. Encourage the near-term use of solar energy for water heating.

Priority 2

We recommend that the State of Illinois:

1. Support education programs designed to inform the general public about all types of solar energy applications.

2. Adopt a system by which consumers can evaluate the performance of solar energy equipment. The National Bureau of Standards and American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) proposed procedures for testing and rating solar system components, and HUD's Minimum Property Standards provide a basis for such a system.

3. Make available short-term financial assistance to solar equipment manufacturers.

4. In order to establish the effect on utilities, the development and use of a "standard utility metering and data package" so that solar installations in the state can be compared on a uniform and consistent basis.

5. Issue some form of mandate for the energy-conscious design of these buildings which are supported by public funding.

Priority 3

We recommend that the State of Illinois:

1. Enact energy performance standards for buildings to encourage energy efficiency, and to permit maximum utilization of solar energy. Such new standards should supersede existing building code impediments to solar energy development.

2. Establish a network of insolation data collection stations throughout Illinois to provide continuous monitoring of information compatible with the National Oceanic and Atmospheric Administration (NOAA) insolation monitoring network.

Priority 4

We recommend that the State of Illinois:

1. Support an educational program to provide information on the use of solar energy for urban food production, such as through the use of greenhouses.

VIII. TASK FORCES

A. COAL UTILIZATION TASK FORCE

Paul Lingo, Chairman

The Coal Utilization Task Force was formed to investigate potential problems associated with increased demand for Illinois coal and to recommend specific policy criteria, legislation, and coal-related research projects to the Commission. In order to better discharge its several responsibilities, it divided into two Committees: the Coal Development Committee, chaired by Jack Simon of the Illinois Geological Survey, and the Coal Transportation Committee, chaired by Gerald Rawling, of the Illinois Department of Transportation. The Coal Development Committee drew up a number of legislative recommendations, including specific proposals for a coal policy, for a coal marketing program in cooperation with the Department of Business and Economic Development, and for a temporary coal tax conversion exemption. The Committee also recommended that the following specific research projects be initiated:

1. Analysis of potential of coal-water-oil mixture as substitute fuel for small to medium boilers converted from coal to oil and/or gas.

2. Study of coal cleaning and status of new method for desulfurization of Illinois coal.

3. Study of impact of compliance of PL 95-87 in Illinois.

4. Socioeconomic analysis of the impact of large energy producing facilities located in rural areas of the State.

5. Study of recovery of carbon and other possible values for Illinois mine refuse.

6. Study of railroad routes, road bed construction, potential availability of rolling stock, etc., to meet demands for increased Illinois coal production (site and area specific).

7. Study of strategies and alternatives of State implementation of Federal-State mine land reclamation to achieve coordination and avoid overlap, duplication, and unnecessary fragmentation of this function.

8. Expanded studies of underground mining effects on surface subsidence.

The research requirements, probable agency responsibility, the probable research group or groups, and the estimated duration and cost of each of these recommended studies were spelled out in detail by the Committee insofar as possible. This information is attached to the minutes of the March 23, 1978, Commission meeting.

After completing a general review of the different modes of transporting coal and examining future prospects for coal transportation in the State, the Coal Transportation Committee recommended the development of a study to be jointly funded by the IERC and the Department of Transportation. The proposed study would identify aspects of the transportation network in Illinois that will require investment--whether for replacement, expansion, or alteration--if coal transportation is to be maintained at its present level or expanded. It would also serve as a base for legislative proposals.

At its September 1978 meeting, the Commission approved a motion to reestablish the Coal Utilization Task Force to investigate possibilities for legislation to be submitted to the 81st General Assembly.

B. COAL RECOVERY TASK FORCE

Senator Gene Johns, Chairman

The purpose of the Coal Recovery Task Force formed in August 1978 was to investigate possibilities for the utilization of coal wastes, specifically slurry and gob, as fuel sources. The potential for marketing waste failings from both strip and underground mining operations at a cost of up to 25 percent less than that of marketing regular coal was the primary motivation for establishing the Task Force, which held its first public meeting in Marion in October 1977.

Also in October, Chairman Senator Johns and Senator Robert Mitchler, another Task Force member, testified in Indianapolis at a public hearing convened by the U.S. Department of the Interior's Office of Surface Mining (OSM) on the proposed permanent regulations under the Surface Mining Control and Reclamation Act of 1977. Representing the Commission Task Force, Senators Johns and Mitchler expressed concern about the possible effects of the proposed regulations on the coal waste recovery industry and emphasized that OSM, in writing its regulations, has assumed powers and responsibilities which are not found in the Act. Specifically, they called upon OSM to remove all regulations and language that differ from the Act until the Congressional authority for such exists without question.

A summary report including recommendations for further action will be presented to the Commission by the Task Force. Emphasis in the report is placed on the importance of making the utilization of coal wastes a top priority.

C. ELECTRIC UTILITIES TASK FORCE

Tor C. Kolflat, Chairman

In response to the 1977 recommendation of the Electric Utilities Study Panel that a committee be appointed "to study the need for siting legislation in Illinois and to explore the factors--economic, technical, environmental, administrative, and legal--affecting the siting of energy facilities," the IERC created the Electric Utilities Task Force. Among its members numbered representatives of electric utilities, including the cooperatives; representatives of State Government, for example the Illinois Environmental Protection Agency and the Illinois Commerce Commission; and interested individuals.

At the Task Force's initial meeting in January 1978, members determined the general direction their efforts would take based on two background reports prepared by Commission staff--one on the history of power plant siting legislation in Illinois and the other on power plant siting programs adopted by other states. Commission staff members were then asked to develop a comprehensive conceptual outline of a power plant siting program for Illinois using the guidelines established at this first meeting.

The conceptual outline was presented for discussion at the March 1978 Task Force meeting. Resolution of all the complex issues in developing a siting program required much additional work, however. A revised conceptual outline which incorporated the suggestions of Task Force members was prepared, and after two more meetings devoted to refining it, it was finally deemed ready to be put into a more detailed, legal format. The resultant IERC legislative proposal specified a State of Illinois single-siting authority composed of a representative from the Illinois Commerce Commission, the Environmental Protection Agency, and the Institute of Natural Resources. This authority would approve plant sitings in advance of the need for new plants so as to provide Illinois utilities with a pool of plant locations from which to choose when construction becomes necessary. A concentrated effort on the part of the Commission staff in cooperation with the Task Force to have power plant siting legislation enacted was anticipated for 1979.

D. GASOHOL TASK FORCE

Representative Adeline J. Geo-Karis, Chairman

On the recommendation of the Commissions's Alternative Energy Committee in late 1978, the Gasohol Task Force was created to investigate the viability of alcohol fuels, specifically "Gasohol," ® in order to determine what if any relevant legislation might be submitted to the 81st General Assembly on the subject. The Task Force's study was to include reports on the fuel's use and potential in Illinois and nationwide.

At its October 6 meeting the Task Force examined the generally accepted definition of "Gasohol" ® (a registered trademark of the University of Nebraska), according to which the fuel is a blend of unleaded gasoline with agriculturally derived ethanol, and then chose to expand it to include ethanol derived from organic materials other than grain. This redefinition, it was felt, would make the use of the fuel economically more acceptable; because organic wastes--whether from feedlot operations, municipal solid wastes, sewage sludge, or low-cost crops--are less expensive sources for ethanol than grain.

At the direction of the Task Force, the Commission staff began work on a summary report of the Task Force's findings and recommendations. The report, anticipated in early 1979, was to be entitled Gasohol: The Fuel of the Future and included both near-term and mid-term recommendations for State and Federal legislation.

E. INSULATION TASK FORCE

Senator Gene Johns, Chairman

The 1977-78 market for insulation was unable to respond adequately to increased consumer demand. Individuals who wished to have additional insulation in their homes were confronted with difficulties in obtaining desired quantity, desired quality, and adequare installation; and the incidence of allegations of consumer fraud was disturbing. To investigate the situation and suggest legislative and administrative measures for ameliorating it, the Insulation Task Force was established by the Commission at the instigation of the Energy Conservation Committee in March 1978.

The Task Force conducted two public hearings--one in Springfield (April 10) and one in Chicago (April 17)--in which representatives of Federal and State agencies, spokespersons for the insulation industry, and consumers participated. Additionally, written information on the problems in the insulation market was solicited directly from manufacturers and the U.S. Department of Energy, the U.S. Department of Commerce, and the Federal Trade Commission.

An October meeting of the Task Force was held to review the hearing recommendations and determine what, if any, action on the part of the State was called for. Speakers at the meeting included representatives from the Institute of Natural Resources, the Department of Administrative Services, the Small Homes Council, the University of Illinois Energy Resources Center, the Federal Trade Commission, the Attorney General's Office and IERC Planning Committee Chairman, Senator Robert Mitchler. Reports indicated that consumers would no longer be confronted with the shortage of cellulose insulation that had been particularly troublesome during the previous two winters. On the basis of this and other information presented at the meeting, the Task Force concluded that existing and pending Federal Government regulations on the insulation industry would supersede any State action. Thus the Commission was advised not to proceed with plans to develop legislation to enact insulation quality standards. In submitting the Task Force's final report to the Commission in November, however, Senator Johns did recommend consideration be given to drawing up some type of State insulation standards that would coincide with FTC rules.

F. CLEAN AIR ACT TASK FORCE

Senator John L. Knuppel, Chairman

The spring 1978 announcement by Commonwealth Edison that its Powerton Plant would use western rather than Illinois coal effective July 1, 1979, was the catalyst to the formation of the Commission's Clean Air Act Task Force. Central to Commonwealth Edison's decision to give up using Illinois coal at Powerton were the 1977 Clean Air Act Amendments, which require industrial compliance with State emission standards by July 1, 1979, or severe financial penalties. Two Illinois mines are especially affected by Commonwealth Edison's conversion to western coal: the Captain Mine in Perry County, and the Monterey Mine near Carlinville, which together provided 4 1/2 million tons of coal for Commonwealth Edison in 1977.

Concerned about the potential economic impact of the Powerton decision, the Task Force initiated an investigation into the relevant facts and issues and presented testimony at the public hearings on the matter held at the Governor's behest in June and July 1978. At the September 29, 1977, meeting of the IERC, resolutions addressed to Governor Thompson and the U.S. Congress regarding the Powerton issue were introduced by Senator Knuppel and approved. The resolution to the Governor urged action on the problem, while the one to Congress expressed the need to change the 1977 Clean Air Act Amendments.

At the time of the hearings, the Governor was empowered by Section 125 of the Amendments to the Clean Air Act to countermand, with the President's consent, the decision of an industry such as Commonwealth Edison to use out-of-state coal to meet air pollution standards if public hearings revealed that the decision would cause severe economic disruption within the State. Although the Governor held hearings pursuant to Section 125, the passage of the National Energy Conservation Policy Act on November 9, 1978, rescinded the Governor's authority to take action, thus depriving the State of Illinois of much of its capacity to influence the situation at Powerton. The Governor's only remaining option was to petition the President to take action.

The Clean Air Act Task Force continued to monitor the situation and has had the Commission staff summarize the testimony at the Governor's hearings and other pertinent information in a report entitled Illinois Coal Use and the Powerton Issue.

G. INTERGOVERNMENTAL TASK FORCE

Representative Daniel M. Pierce, Chairman

Formed in 1975 on the recommendation of the Commission's Intergovernmental Committee, the Intergovernmental Task Force is composed of representatives of the various agencies, departments, boards, and commissions in the State. It is charged with (1) providing a forum for the discussion of energy-related issues, including conservation, alternative

energy sources, and education, as these subjects pertain to the represented governmental institutions, their employees, and the public they serve; (2) making recommendations to member agencies and institutions on energy and energy conservation policies, programs, and activities; and (3) making recommendations for energy-related legislation. In establishing the Task Force, the Commission hoped to promote communication on energy issues and avoid duplication of effort among the represented organizations and agencies in energy activities.

In 1978 the Task Force continued to discharge its responsibilities for disseminating energy information and coordinating energy activities within the State and the State Government. Two member agencies contributed to the State Fair exhibit (see Sect. IX B) organized by the Commission: the Department of Agriculture provided a Gasohol exhibit, and the Department of Public Health provided a model home display illustrating State standards for modular housing and Federal standards for mobile homes.

In addition, the following fifteen member agencies and organizations submitted reports on their energy activities in order to facilitate the Task Force's coordination effort: the Mined Land Reclamation Council, the Department of Administrative Services, the Commissioner of Banks and Trust Companies, the Illinois Commerce Commission, the Emergency Services and Disaster Agency, the Environmental Protection Agency, the Illinois Institute for Environmental Quality, the Governor's Office of Manpower and Human Development, the Department of Local Government Affairs, the Local Government Law Enforcement Officers Training Board, the Military and Naval Department, the Department of Personnel, the Department of Public Health, the Department of Transportation, and the Treasurer of the State of Illinois.

At the Task Force's November 28, 1978, meeting, Representative Pierce recommended the formation of a subcommittee composed of representatives of the Commerce Commission, the Institute of Natural Resources, the Capital Development Board, the Department of Transportation, the Department of Administrative Services, and the Bureau of the Budget to research and report on the impact of the National Energy Act in Illinois. Of particular concern in this analysis is the need to determine what legislation is necessary at the State level and which State agencies would be responsible for implementing individual sections of the Act. With its first meeting scheduled for the following January, this investigative subcommittee was expected to continue to function through 1979.

IX. COAL DEVELOPMENT

A. PROJECTS APPROVED BY THE STATE OF ILLINOIS

1. Combustion Engineering Industrial Application of Fluidized Bed Combustion Project

Total Cost $8.3 million
State Share: $750,000 (approved July 25, 1977)
Site: Great Lakes Naval Station
Status: Ongoing

Description: Construction of boilers to heat buildings at the Naval Station, based upon an agreement signed by State and Federal Officials on October 31, 1978, is expected to begin in the early part of 1979. The facility, to be completed in 1981, is expected to operate for at least 30 months and use 15,000 tons of Illinois coal each year of operation. (Note: Although the training base at the Great Lakes Naval Station is due to be phased out by 1981, the hospital is expected to continue to operate.)

The goals of this project are: (1) to design a fluidized bed boiler to burn high sulfur coal while meeting all environmental standards without the use of auxiliary sulfur dioxide removal equipment; and (2) to demonstrate the potential of fluidized bed units that satisfy the following requirements:

a. create a minimal impact on the industrial user
b. burn coal at a level competitive with not only other coal-fired units equipped with sulfur dioxide removal systems but also with other coal conversion processes.

Fluidized bed boilers such as envisioned in this project meet requirements for Category I: Industrial Steam Generators, with the steam being used in back-pressure turbines, industrial processes, process heat, and space heat. In addition to coal with a minimum sulfur content of 3%, lignite coals and coal wastes can be used as fuels for the boiler.

The Energy Resources Commissions's Technical Committee report on this project indicated that the technology for fluidized bed combustion is not felt to be sufficiently advanced to confidently design commercially sized equipment. Before the conceptual design for the demonstration fluidized bed boiler can be finalized, data must be obtained from a subscale unit operating under a variety of conditions.

No Coal Development Bond funds have been approved for this project; the Capital Development Board approved $750,000 for the project on July 25, 1977. Construction start-up has been delayed until a PSD (Prevention of Significant Deterioration) review for the project site has been completed, but is expected to begin in March 1979.

2. KILnGAS Low-Btu Coal Gasification System

Total Cost: $100 million
State Share: $18 million (approved February 28, 1979)
Site: Wood River
Status: Pending

Description: This proposal, offered by Allis-Chalmers Corporation and Illinois Power Company on behalf of themselves and nine other utility companies, is for the construction of a demonstration plant at the Illinois Power Wood River Generating Station using a process currently in pilot-plant operation at Allis-Chalmers' Oak Creek facilities near Milwaukee, Wisconsin.

The objectives of the proposed demonstration plant are:

1. to demonstrate the conversion of large quantities of Illinois high-sulfur caking coals to a clean, low-Btu fuel suitable for a combined cycle operation in a safe, economical, and environmentally acceptable manner;

2. to demonstrate the gasifier's ability to produce low-Btu gas over a wide load range while maintaining a sufficiently high heating value to support stable combustion, an important consideration in meeting varying loads;

3. to demonstrate the ability of the KILnGAS system to operate continuously at a pressure consistent with minimum acceptable requirements for economic combined cycle application;

4. to demonstrate the ability of the plant to meet all air emission standards for new sources, and to meet plant effluent standards with acceptable maintenance and operability requirements.

The KILnGAS system is unique in several respects. First, it uses a ported rotary kiln of a type now in commercial use for the reduction of iron ore; thus the essential mechanical concepts of the system have been proven. Second, the process has been developed to this point entirely through private financing. And finally, all mechanical components are either commercially available or are modifications of commercially available equipment; it is felt that the risk involved, an important factor in the cost of a demonstration plant, is low.

A number of particularly desirable characteristics enhance the potential value of the KILnGAS system. (1) It is able to process highly caking coals, coal fines, and raw, untreated coals. (2) The processing rate can be changed very quickly without upsetting process stability; this is important for following load changes in nonbase load settings. (3) The system is capable of meeting strict air quality standards. (4) It can be integrated with very efficient combined cycle power plants and produce electric power more efficiently than present coal-fired plants equipped with scrubbers.

B. PROJECTS UNDER CONSIDERATION

1. Illinois Coal Gasification Group (ICGG) Pipeline Gas Demonstration Plant Project

Total Cost: $334 million
State Share: None requested as yet
Site: Perry County, Illinois
Status: Under consideration

Description: The CoGas process to be used in this project is based on the COED process developed by the Bureau of Mines Office of Coal Research. Coal is converted to both gaseous and liquid products through pyrolysis, and the resulting char is further gasified to make synthesis gas in a low-pressure system without requiring bulk oxygen. The pyrolysis and hydrotreating steps have been successfully operated for four years in the COED pilot plant, and COED's raw oils have been treated to yield fuel oils and synthetic crude oils. The gasification step has been tested for more than 500 hours (as of February 1976) and was continuing at a pilot plant operated by the British Coal Utilization Research Association. A high-Btu synthetic pipeline quality gas is the end product.

ICGG is competing with CONOCO (in Ohio) for DOE funding. Phase I work, the conceptual engineering for the plant, has been completed by both groups. Originally expected to select only one project to continue into Phase II (detailed engineering studies), DOE has decided to support Phase II activities of both the CONOCO and the ICGG projects. Should the ICGG be successful in obtaining federal funding for construction and operation of the project, the Energy Section of the Institute of Natural Resources will study the program and make a recommendation as to the level of support the State of Illinois should provide.

2. Central Illinois Public Service Generation Two Double Alkali Flue Gas Desulfurization (FGD) System

Total Cost: $120 million
State Share: $15 million
Site: Newton, Illinois
Status: Under consideration

Description: This scrubber process, which is not employed in Generation One scrubbers, uses a number of steps to remove not only sulfur dioxide from the flue gas, but also chlorine, a trace element in many midwestern coals. If not removed, the chlorine can cause corrosion in the scrubber. The end product of this process is a relatively dry and stable filter cake rather than a sludge, which should reduce handling and water pollution problems.

The system is now under construction for Central Illinois Public Service's unit number one; completion is expected in November 1979. If it proves to be economically viable, the State of Illinois may realize the following benefits:

a. Illinois coal will continue to be used at the station; currently 1.5 million tons are used each year when the plant operates at 75 percent of capacity.

b. Success will encourage other utilities to build Illinois coal-fired installations.

c. Implementation of this process at Newton and elsewhere can reduce overall utility costs to the consumer by making possible the use of Illinois rather than western coal.

3. AMOCO Oil Coal Liquids Refinery Facility

Total Cost: $61.2 million
State Share: $3 million
Site: Wood River
Status: Under consideration

Description: This project is proposed as a cooperative effort of AMOCO, the State of Illinois, and the U.S. Department of Energy to develop a refining facility for liquids derived from coal liquefaction. The operation is expected to use 25,000 bbl/year of coal liquids to produce 15,000-20,000 bbl/year of gasoline and heating oil. Upon its completion, AMOCO will allow the Department of Energy (and other governmental groups) and industry to utilize the facility for an additional period of time. As originally structured, the project had three phases: (I) process selection, July 1978 to September 1979; (II) design and construction, October 1979 to September 1981; and (III) operation, October 1981 to April 1984. The U.S. Department of Energy, however, has decided not to fund projects of this sort until the mid-1980s at the earliest.

The Illinois Division of Energy has recommended support of this project at $3 million. State funding, however, is contingent on U.S. Department of Energy support. The AMOCO proposal, submitted to the DOE on July 1, 1977, is in competition with two other project proposals for federal funding.

4. Peck-Pircon Flue Gas Desulfurization System

Total Cost: $10 million (for 100 megawatt size boiler)
State Share: None requested as yet
Site: Not definite, contemplated for Springfield
Status: Consideration pending development of proposals

Description: The Peck-Pircon process converts stack gases into a plant food, with the potential to do this more economically than present industrial methods. A commercially sized facility could have the capability to make five categories of fertilizer products; the existence of a market for each has been established. Both liquid and solid fertilizers can be produced. Capital costs to do this are expected to be less than those to build facilities producing a throw-away sludge that is difficult to dispose of. Fly ash and sulfur dioxide are simultaneously removed in a heterogeneous reactor. The energy required for an industrial unit is only 5 percent of the amount required for conventional venturi scrubbers, with a 50 percent removal of sulfur dioxide, compared to only 30 percent removal in the conventional units; plain water alone was used as a scrubbant in these tests.

The Illinois Institute of Technology has conducted bench tests and pilot plant operations, with a sulfur dioxide input concentration of 1,200 ppm (parts per million), and a stack gas output concentration of only 3 ppm. Bench tests found that, when a coal containing 6.2 percent sulfur by weight was burned, 95 percent of the sulfur was recovered, producing a fertilizer containing diammonium phosphate, calcium sulfate, and sulfite. The greater the sulfur content of the coal used, the greater the fertilizer output and the more economical the return.

Preliminary agronomic studies carried out at the Argonne National Laboratories have shown that process fertilizer strongly stimulated soybean growth; also, wheat and brome grass grew well in coal mine spoil when fertilized with process material; this could be of use in aiding strip mining reclamation efforts, and at a reduced cost.

Other potential benefits of the Peck-Pircon process for the State include: (1) the increased use of high-sulfur Illinois coal with an economic incentive of the marketable fertilizer product and the elimination of the costs of sludge disposal, (2) possible reduction in fuel costs to industries and utilities, (3) the use of low grade phosphate rock as an input material, (4) the high turn-down ration of the process--which means it can efficiently follow variations in load, and (5) the low energy requirement of the process.

C. IMPORTANT COAL DEVELOPMENT PROCESSES

1. Coal Blending

The primary purpose of a coal blending project would be to increase out-of-state sales of Illinois coal by producing a more saleable and higher quality product and by utilizing economies of scale in shipping. Although western coals are now in sulfur content, they exhibit a high level of ash production and a low Btu content (6,000-9,000 Btu per ton compared to 10,000-12,000 Btu per ton of Illinois coal). Blending appropriate proportions of low sulfur western coals and high Btu Illinois coals results in an economically viable fuel that meets sulfur emission standards and yet has a relatively high Btu content.

Blending is not a new concept. A 300,000 ton facility is in operation at the Utah Construction and Mining Company's Navaho Mine in Fruitland, New Mexico. Blended coal has market potential in the Midwest, South, Southeast, and Eastern portions of the U.S. as well as overseas.

A typical station would have an annual average handling capacity of 27.5 million tons. The capital cost for such a plant would be approximately $30 million. The annual operating cost has been estimated at $4.2 million. On the basis of these figures, the cost of blending coal adds less than 5¢ per ton to the cost of transferring coal from rail to barge. As the volume moved increases, this cost is expected to decrease.

No request for funding is known, although Tri-City Port District has expressed an interest in the process.

2. Coal-Oil-Water Emulsion Fuel System for Clean Burning of High Sulfur Coal

In this process a stable, pumpable fuel of 45% powdered coal, 35% oil, and 20% water is produced through emulsion. A viscous liquid with properties similar to those of Number 6 fuel oil, this fuel can be used in oil-fired boilers. Initial research indicates that a 50% reduction of the sulfur oxides generated in a conventional coal combustion can be obtained by injecting powdered limestone in the combustion process. This technique also reduces the amount of soot produced during combustion, thus decreasing fouling of boiler tubes, reducing maintenance problems, and improving the efficiency of operation. A water-oil system was reportedly undergoing tests by the National Aeronautics and Space Administration at the Goddard Space Flight Center in Greenbelt, Maryland.

This process was proposed by the Capital Development Board in June 1976 for use at the Menard Correctional Center in Menard.

In favor of the proposal was the proximity of the Coal Extraction and Utilization Research Center at Southern Illinois University (Carbondale) to Menard. The Center is considered to have the capability to provide necessary analysis of the coal as well as deal with problems of transportation, handling, pulverization, and feed for the proposed system.

X. ENERGY EDUCATION PROJECTS

A. ENERGY OUTLOOK MEETINGS

With the Illinois Chamber of Commerce as cosponsor and representatives from the U.S. Department of Energy and the Illinois Manufacturers Association as cooperating participants, the IERC held four Energy Outlook Meetings in late 1978--in Springfield on November 20, in Joliet on December 1, in Belleville on December 4, and in Skokie on December 8. Topics for the meetings were: (1) the outlook for the 1978-79 winter energy market, specifically supply and demand variables and the possibility of shortages, and (2) the significance of the National Energy Act passed November 9, 1978, for Illinois energy consumers and producers.

The National Energy Act was the subject of a keynote speech given by a spokesperson for the U.S. Department of Energy at each meeting and followed by commentary from participants on how their energy-related activities would be affected. The outlook for the energy market in the approaching winter was characterized by suppliers, who discussed available energy sources; State personnel, who presented an overview of the State's energy programs; and by university representatives, who reviewed energy-related research programs in process at their institutions. Attendance was good, and on the basis of their favorable reception, another series of Energy Outlook Meetings is planned for 1979.

B. STATE FAIR

As a part of its continuing effort to enhance energy awareness in the public sector, the Commission took advantage of the opportunity presented by the 1978 Illinois State Fair to reach a large segment of the State population with information on energy conservation and development. The following exhibitors contributed to the IERC energy display at the Fair:

Exhibitor	Exhibit
Celotex Corporation	Insulation (Thermax)
Howard Hembrough Volkswagen Inc.	Diesel Rabbit
Illini Motor Co.	Honda
Illinois Coal Gasification Group	Model of the CoGas Process
Illinois Department of Agriculture	Gasohol display

Illinois Department of Public Health	Miniature model home illustrating federal standards for mobile homes and state standards for modular housing
KILnGAS	Movie and display on KILnGAS Process
Landmark Ford Inc.	Ford Fiesta
Lincoln Land Community College	Display and brochures: "A Positive Approach to Energy Conservation"
Rail Splitters Motor Sales Company	Mercury Bobcat
Sunduit	Display and brochures: solar energy water heating system
U.S. Department of Energy	Energy Awareness booth
Williams Insulation Company	Attic fan, cellulose and fiberglass insulation, celullose and foam insulation

C. ANNUAL ENERGY CONFERENCE

The Sixth Annual Energy Conference focused on the problems of electric utilities in the State of Illinois, examining relevant issues and placing them in a national context as well. Held in Chicago in September 1978, the Conference was sponsored and directed by the Energy Resources Center, University of Illinois Circle Campus, and cosponsored by the Illinois Energy Resources Commission, the Illinois Institute of Natural Resources, and the U.S. Department of Energy.

The subject of the Conference was particularly timely since State and Federal legislation on power plant siting are under consideration and policy is expected to be formulated and enacted at both governmental levels in the near future. At the State level, although siting has been the subject of bills introduced into the 79th and 80th General Assemblies (1975-1978), no siting legislation has been enacted. In response to the clear-cut need for such legislation, the Electric Utilities Task Force of the IERC (see Sect. VIII) has developed proposals on power plant siting for submission to the 81st General Assembly.

D. ILLINOIS LEGISLATIVE ENERGY INTERNSHIP PROGRAM

In order to provide practical experience in the workings of government as they pertain to energy conservation and development, the IERC offers energy internships each year to qualified students in high school and college. IERC interns are called upon to perform a variety of

functions, including attending legislative hearings and other meetings and conferences, reviewing programs, researching specific subjects, preparing briefs, and drafting legislative proposals. Depending on their interests and qualifications, Commission interns may specialize in any of the following areas:

Coal Development
Solar Energy
Electric Utilities
Natural Gas and Petroleum
Solid Waste and Biomass
Environment
Energy Conservation
Energy Awareness

The Commission's 1978 interns were:

Denise Appenzeller	Student Intern	Lincoln Land Community College
David Joyce	Legislative Intern	Lincoln Land Community College
Paul Lerch	Student Intern	Springfield School District 186
R. David McCuen	Legislative Intern	Southern Illinois University, Edwardsville

E. SPEAKERS BUREAU

This year marked the beginning of another IERC program to develop energy awareness in all sectors of the State. The Commission took the first step toward the formation of a Speakers Bureau, which will be designed to expedite the dissemination of vital information on energy development and conservation. Results of studies on energy-related topics and reports on new developments in energy technology were solicited from government agencies and private industry. This information is to be used in compiling a series of speeches designed for presentation to the general public and available to any interested person or group. The Commission expects to complete this project in late 1979, at which time the Speakers Bureau service will go into effect.

F. ENERGY EDUCATION TOURS

The Energy Education Committee organized a series of tours of energy facilities in November and December. These tours were scheduled to allow Commission members, members of the General Assembly, and other interested parties to view first-hand various energy production processes.

In all, five facilities were visited: SolarFlame Systems, Inc., in LeRoy; General Electric's nuclear waste storage facilities in Morris; Central Illinois Public Service Company's power plant in Newton; Illinois Power's generation plant at Wood River; and Northern Illinois Gas in Aurora. More tours are scheduled for 1979.

XI. IERC ENERGY LEGISLATION

A. 1978 IERC LEGISLATION

A number of legislative proposals were developed by Commission staff on the basis of Task Force, Study Panel, and committee recommendations. At its May 1 meeting, the Commission approved six of the proposals as qualifying for submission in the 1978 budgetary session of the 80th General Assembly. (Budgetary session rules limit action to appropriation bills or substantive bills deemed emergency measures.) These six proposals were then drafted into the following pieces of legislation:

Number	Sponsor	Partial Description
HB 3054	Lucco/Nimrod	Seasonal shutdown of gas-fired afterburners for hydrocarbon emission control.
SB 1772	Buzbee/Pierce	Life-cycle cost analysis for new State buildings of over $5 million in cost.
SB 1825	Nimrod	Coal conversion equipment defined and exempted from taxation for 5-year period.
SB 1861	Nimrod/ Geo-Karis	Institute of Natural Resources created by combining Division of Energy, Illinois Institute of Environmental Quality, three State Surveys, and the State Museum.
HJR 80	Geo-Karis/ Mitchler	Division of Energy directed to develop 5-year alternative energy plan.
SJR 75	Johns/ Dunn, R.	Illinois coal to be used as priority fuel source.

HB 3054, SB 1861, and SJR 75 were passed by both Houses by the close of the General Assembly's spring session. Only SB 1861, however was signed into law by the Governor (see Sect. XB).

B. APPROPRIATIONS

1. IERC

The FY 79 budget request of the Commission, introduced as HB 3282, proposed an operating budget of $199,065. During the legislative process, it was moved to HB 3069 for a total of $157,065. A conference committee was appointed in the Senate, and the Commission budget was finally placed in HB 3392 at a total of $167,320.

2. Institute of Natural Resources (INR)

Created by PA 80-1218 (SB 1861), the Illinois Institute of Natural Resources combines the Division of Energy from the Department of Business and Economic Development, the Illinois Institute for Environmental Quality, the Illinois State Museum, the Illinois State Water Survey, and the Illinois State Natural History Survey. Effective July 1, 1978, when INR came into existence, its FY 79 $21,214,200 budget included the appropriations for both the Division of Energy and the Institute for Environmental Quality at a total of $1,042,000; $14 million committed from the Coal and Energy Development Bond Fund for various development projects; $3+ million in federal energy-related grants; and $1.9 million for environmental research.

C. IERC INTRODUCED LEGISLATION, 80TH GENERAL ASSEMBLY

Number	Sponsor	Partial Description
HB 1120	Lucco	Creates Energy, Environment, and Natural Resources Commission.
HB 1121	Lucco	Joint Committee on Natural Resources Department created.
HB 1122	Lucco	Natural Resources Department created.
HB 1123	Lucco	Task Force on Creation and Development of Natural Resources Department created.
HB 1124	Lucco	$100,000 appropriated to Task Force on Natural Resources Department.
HB 1125	Lucco	Statutes amended to reflect creation of Natural Resources Commission and Task Force.
HB 1279	Geo-Karis	$5,000,000 from Coal Development Bond Act applied to alternative energy research.
HB 1454	Geo-Karis	Illinois Energy Resources Commission Act amended.
HB 1455	Geo-Karis	School Code amended to include energy conservation measures in driver education curriculum.

Number	Sponsor	Partial Description
HB 1512	Dunn, R.	Solar easements
HB 1513	Dunn, R.	Community College Act amended to include energy studies in curriculum.
HB 1514	Dunn, R.	Community College Act amended to include duty of board to incorporate energy studies into curriculum.
HB 1521	Lucco	IERC study of solar rights.
HB 1560	Pierce	Home insulation assistance.
HB 1597	Geo-Karis	$147,100 appropriated to Energy Resources Commission.
HB 1748	Schisler	Solar Energy Heating and Cooling Act amended.
HB 1749	Schisler	Board of Higher Education Act amended to require comprehensive energy planning at higher education institutions.
HB 2036	Dunn, R.	Board of Higher Education Act amended to require institutions to include energy studies in curriculum.
HB 2187	Geo-Karis	Department of Transportation Act amended to provide help in traffic flow and car pool planning to local governments.
HB 2238	Geo-Karis	Department of Transportation Act amended to authorize carpooling programs.
HB 2310	Geo-Karis	Illinois Energy Resources Commission Act amended to permit acceptance of grants and assistance.
HB 3054	Lucco/ Nimrod	Seasonal shutdown of gas-fired afterburners for hydrocarbon emission control.
SB 0563	Mitchler	BED study of coal market.
SB 0564	Mitchler	Illinois Commerce Commission to implement load studies.
SB 0738	Knuppel	Technical assistance for energy programs in schools.
SB 0739	Knuppel	Methods of energy education to be included in curriculum of institutions of higher education.
SB 0740	Knuppel	Vehicle Code amended to provide for vanpooling.
SB 0833	Buzbee	CDB feasibility studies of energy source for state buildings to be constructed.

Number	Sponsor	Partial Description
SB 0834	Buzbee	State agencies required to provide life-cycle costing analysis of energy consumption.
SB 0835	Buzbee	CDB--Energy Advisory Conservation Council created.
SB 0836	Buzbee	Use of recycled paper by State agencies.
SB 0837	Buzbee	Energy conservation standards for state construction.
SB 0888	Buzbee	Illinois Energy Resources Commission funding.
SB 0889	Buzbee	Solar energy to be used in schools.
SB 0890	Buzbee	Solar energy to be used in institutions of higher education.
SB 0893	Nimrod	Energy Week provided.
SB 0917	Mitchler	Funding through Illinois Commerce Commission for energy mandated legislation.
/ SB 0918	Knuppel	Schools required to provide energy instruction.
SB 0944	Nimrod	Comprehensive Solar Energy Act.
SB 1045	Buzbee	Emergency closing of schools due to energy shortage.
/ SB 1127	Buzbee	Illinois Commerce Commission to certify intermittent ignition devices for pilot lights.
/ SB 1328	Nimrod	Energy Conservation Act.
SB 1142	Nimrod	Department of Mines and Energy created.
SB 1825	Nimrod	Coal conversion equipment defined, exempted from taxation for five-year period.
SB 1861	Nimrod/ Geo-Karis	Institute of Natural Resources created.
HJR 80	Geo-Karis/ Mitchler	Division of Energy to establish five-year alternative energy plan.
SJR 75	Johns/ Dunn, R.	Illinois coal utilized as priority fuel source.

D. IERC PROPOSED LEGISLATION, 81ST GENERAL ASSEMBLY

1. Energy Conservation: State Vehicles

Requires state vehicles to meet federal minimum mpg standards. In any given model year, the mpg rating of any vehicle purchased in the State, except emergency vehicles (such as fire, police, ambulance), shall be such as to meet the federal standard for that model year that is not subject to a "gas guzzler" tax imposed by the Federal Energy Tax Act of 1978.

2. Amends Industrial Pollution Control Financing Act.

Extends use to waste recovery for energy, to alternative energy systems, and to pollution resulting from the production, conversion, or utilization of energy produced from coal.

3. Alternative Energy Systems Tax Exemptions

Provides exemption from State Occupation and Use Tax Acts and the "Revenue Act of 1939" for alternate energy facilities or equipment (including solar energy devices) which use renewable sources of energy.

4. Waste Oil Recovery Act

Provides for waste oil recovery/recycling. Encourages and promotes the use of recycled oil so as to reduce the consumption of new oil and to protect the environment from the pollution due to the disposal of used oil. Voluntary program.

5. Energy Policy/Planning Act

Establishes State energy policy and structure to carry out the formulation of a comprehensive energy plan. Declares that it is the policy of the State to become energy self-reliant, by utilization of energy resources available within the State and by energy conservation. Calls for the development of a comprehensive energy plan, and amends INR's mandate to expand the contingency planning function now held by INR. Creates an Energy Planning Panel, consisting of INR Director (panel chair); ICC Chairman; IERC Chairman. Panel is to direct and approve draft comprehensive plans.

6. Power Plant Siting Act of 1979

Creates an Electric Generating Facilities Council and gives it rule-making power to help it in accomplishing its power plant siting duties under the Act. Objective is to streamline the permitting process for new power plants. (Endorsement conditional upon approval of legislation by Electric Utilities Task Force.)

7. Energy Conservation Bond Act

Establishes a bond fund to make loans for the NEP-1 schools and hospitals program. Provides $40 million as loans with 5 year payback period to local districts, hospitals, institutions, and units of local government to match federal funds for energy audits and conservation measures. Minimum loan $10,000; interest rate of loan to be that rate at which the bond was issued.

8. High-Sulfur Coal Resolution

Midwest High-Sulfur Coal Resolution. Directs IERC to investigate the formation of an interstate task force of states producing high-sulfur coal for the purpose of discussing strategies to increase the use of high-sulfur coals, and to take steps to establish such a task force, should interest be expressed.

Under consideration by the IERC Executive Committee:

9. Coal Resolutions:

(a) Supports the Northern Tier oil pipeline.
(b) Suggests and supports the coal-oil slurry transportation concept for the Northern Tier pipeline.
(c) Supports the action by Consolidation Coal Company, which petitioned US EPA to review the information available about the effects of sulfur dioxide emissions, and calls upon US EPA to announce its sulfur dioxide revisions prior to July 1, 1979, or else to relax or suspend the current regulations pending the study of new data.
(d) Supports the effort by Wes Watkins, Congressman from Oklahoma, to technically amend the Clean Air Act Amendments of 1977 to extend the 1979 deadlines by one year, and urges the Illinois Congressional Delegation to support this effort.
(e) Supports the recovery of coal from mining wastes for its energy conservation potential, requests the U.S. Congress to clarify the "Surface Mining Control and Reclamation Act of 1977" on this issue, and requests the Governor to contact the President and the Secretary of the U.S. Department of the Interior to delay the implementation of OSM regulations on this area until a clarification has been made.

10. Requires Energy Line Item on State Budget Requests

Purpose is to require energy costs to be brought out for examination, and through this examination to encourage energy conservation. Secretary of State to develop guidelines, rules, and regulations for all agencies, departments, or commissions for whom the Secretary of State's office pays for the use of energy. Effective January 1, 1980. (Legislation may not be necessary.)

XII. FEDERAL ENERGY LESIGLATION

The effects of three major pieces of energy legislation at the Federal level have begun to be felt in Illinois: the Surface Mining Control and Reclamation Act (1977), the Clean Air Act Amendments (1977), and the National Energy Act (1978). The following sections present a brief discussion of the most significant aspects of these new Federal laws.

A. SURFACE MINING CONTROL AND RECLAMATION ACT

This Act, which is intended to address problems related to surface mining and the surface effects of underground mining, has a major impact on the production and use of Illinois coal. Its impact is due in large part to the levy of a 15¢ per ton tax on coal mined underground and a 35¢ per ton tax on surface mined coal. The administration of the Act is presently under an interim program; a permanent program is to be adopted in 1979.

B. CLEAN AIR ACT AMENDMENTS OF 1977

This legislation, too, had a profound impact on the production and use of Illinois coal, for it moved up the deadline for industry compliance with air quality emission regulations by several years to July 1, 1979. On that date, according to these Amendments, Illinois industry must be in compliance with the Illinois Environmental Protection Agency's implementation plan or suffer severe financial penalties. The consequences of this legislation for the Illinois coal and related markets are serious, as the following examples indicate:

1. Commonwealth Edison has chosen to substitute western for Illinois coal at its Powerton plant in order to meet the emission standards that go into effect July 1, 1979. This changeover means the loss of a market for 4 1/2 million tons of Illinois coal per year--8 percent of Illinois coal production.

2. Central Illinois Public Service Co.'s Unit #1 at Newton is reportedly in violation of air quality emission standards at this time. A scrubber system is presently being installed for Unit #1 and is expected to go into operation sometime in 1979. Once the system becomes operational, CIPS will begin evaluation of its effectiveness--its economic viability and emission retardant capability. Continued use of Illinois coal in Unit #1 is contingent on the results of this cost-effectiveness study, which will be conducted over a period of several years.

   CIPS is also in the process of constructing Unit #2 at Newton. This unit will be fueled with western coal, at least in the short run. If the scrubber system in Unit #1

proves effective, a scrubber system will be installed in Unit #2, and Illinois coal will replace the western coal. Unit #1 uses approximately 1.2 million tons of Illinois coal per year. Unit #2 will use an equivalent amount if the transition from western coal is made.

3. There is a possibility that the Clean Air Act Amendments and a suit brought by Illinois Attorney General William Scott will cause Union Electric's Labadie and Portage de Sioux power plants to switch to western coal from Illinois coal. These two power plants use between 8 and 9 million tons per year (approximately 14.8 percent of production in Illinois).

C. NATIONAL ENERGY ACT

This comprehensive piece of legislation consists of five different Acts, the significant aspects of which are outlined below.

1. Public Utility Regulatory Policies Act (PL 95-617)

This Act calls for a State regulatory authority (in Illinois, the Commerce Commission) to conduct studies in relation to electric and natural gas utilities on Federal standards for (1) cost of service, (2) declining block rates, (3) time-of-day rates, (4) seasonal rates, (5) interruptible rates, and (6) load management techniques.

The Act does not preclude lifeline rates; in other words, the State can adopt such rates. It does provide for State utility regulatory assistance.

Title IV of the Act establishes a small hydroelectric power projects program in connection with existing dams under which there is funding for loans to various groups for such projects.

Title V of the Act (pipeline authorization) provides for a crude oil transportation system to bring Alaskan oil to the inland and northern tier states; Illinois is considered as one of the latter.

2. Energy Tax Act of 1978 (PL 95-618)

This Act creates residential energy credits, a "gas guzzler" tax, exemptions from motor fuel excise taxes for certain alcohol fuels, vanpool credits, and business investment credits for energy conservation.

3. National Energy Conservation Policy Act PL 95-619)

Established in this Act are residential energy conservation programs, weatherizing grants for low-income families, secondary financing and loan insurance for energy conserving improvements and solar energy systems, and energy efficiency standards for autos and other consumer products including industrial equipment.

Title III of the Act provides for energy conservation programs for schools, hospitals, buildings owned by units of local government, and public care institutions.

4. Power Plant and Industrial Fuel Use Act (PL 95-620)

This Act specifically prohibits new power plants from using natural gas or petroleum as a primary energy source. In addition, it stipulates that no new power plants may be constructed without the capability to use coal or any other alternate fuel as a primary energy source.

The following restrictions are placed on existing plants:

a. Natural gas may not be used as a primary energy source on or after January 1, 1990.

b. Natural gas is not to be used as a primary energy source before January 1, 1990, unless it was used as a primary source during the calendar year 1979.

c. Natural gas is not to be used as a primary energy source in an existing electric power plant in any calendar year before 1990 in greater proportions than the average yearly proportion of natural gas which (i) such power plant used as a primary energy source in calendar years 1974 through 1976 or (ii) such power plant used as a primary energy source during the first two calendar years of its operation, if it began operation on or after January, 1974.

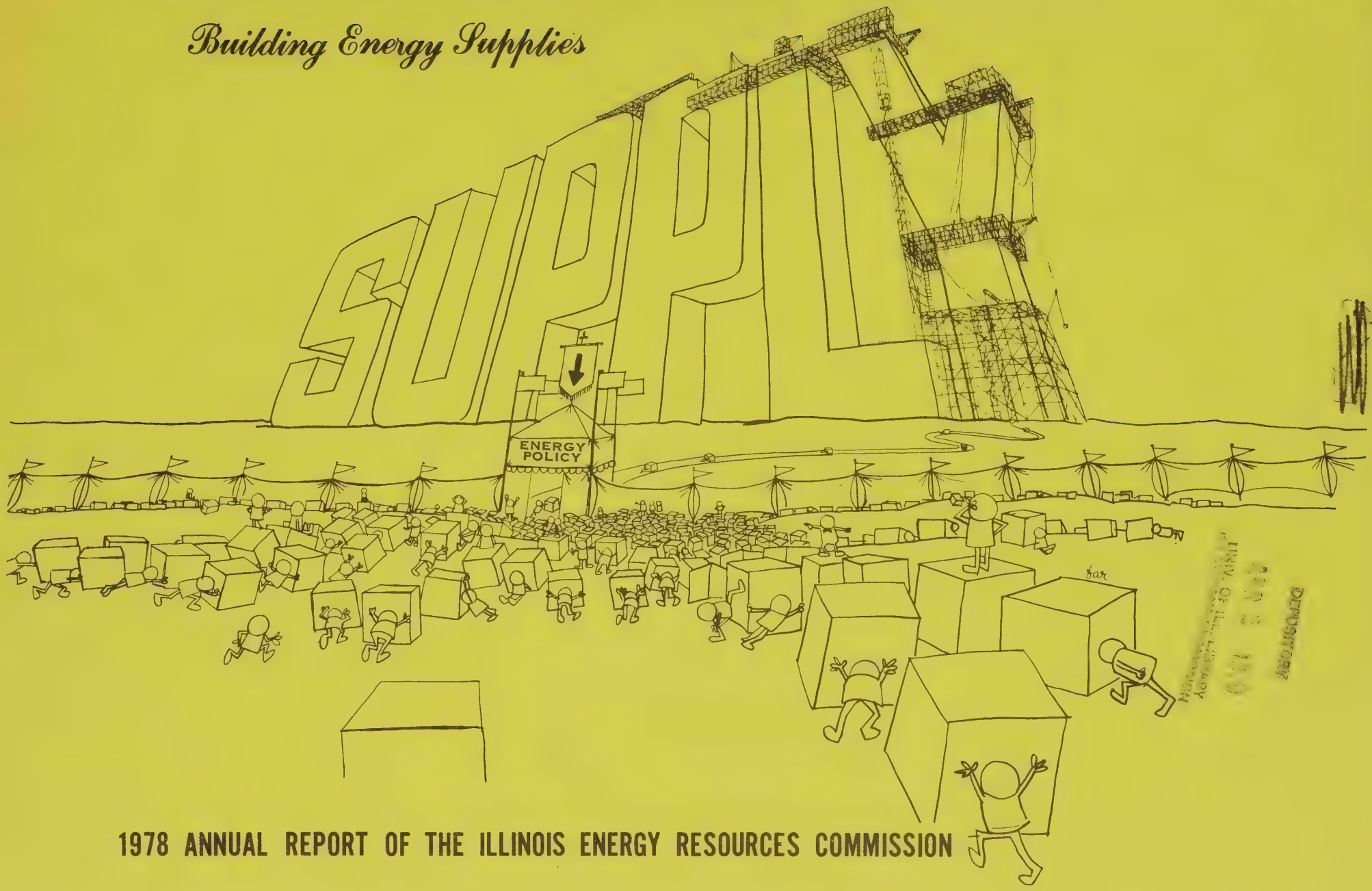
5. Natural Gas Policy Act of 1978 (PL 95-621)

This Act establishes wellhead price controls, decontrols certain natural gas prices, and curtails certain natural gas uses.

XIII. ACKNOWLEDGMENTS

The Illinois Energy Resources Commission gratefully acknowledges the support and assistance of the Commission staff in preparing the 1979 Annual Report. The information contained herein was collected and compiled under the supervision of Staff Director Donald G. Handy by Judith L. Bleicher with the help of R. David McCuen, Jim Ames, and Mark Nelson and typed by Beverly N. Butler. The schematic drawing of the KILnGAS demonstration project which appears on the front cover is presented here courtesy of Allis-Chalmers.

Building Energy Supplies



1978 ANNUAL REPORT OF THE ILLINOIS ENERGY RESOURCES COMMISSION

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Illinois Energy Resources Commission
ROOM 713 STATE OFFICE BUILDING
SPRINGFIELD, ILLINOIS 62706
PHONE (217) 782-8220

I. TO THE MEMBERS OF THE GENERAL ASSEMBLY

Dear Members:

Enclosed is the fourth annual report of the Illinois Energy Resources Commission, submitted in accordance with Public Act 78-1125. This document reflects the activities, accomplishments, and recommendations of the Commission during the period of March 15, 1977 through March 15, 1978.

The Commission's chief priority during the next twelve months will be the development of a State Energy Plan and Policy. The Commission believes that attention must be focused not only on the rapid development of new resources of energy, but also on the allocation and conservation of existing supplies. Although new technology must be secured, its implementation must be strongly and judiciously weighed against a broad range of competing and equally compelling social, economic and environmental values. The Commission recognizes the complexity of the problem and intends to proceed in a manner compatible with accomplishing timely planning without forfeiting its validity or completeness.

The Commission will continue into the next year with a program of legislative action and governmental review. In addition, a major area of endeavor has been development by the Commission's Study Panels of six extensive and comprehensive Energy Reports, which will provide background for the Commission's recommendations on an Energy Plan and Policy for Illinois. The Commission expects to reactivate these panels, so that their reports are up-to-date with the many changes taking place in the energy picture.

Sincerely,

Representative Joe E. Lucco, Chairman

Senator John J. Nimrod, Vice-Chairman

James P. Hartnett, Ph.D.
Secretary

II. MEMBERS AND OFFICERS OF THE ILLINOIS ENERGY RESOURCES COMMISSION

Chairman, Representative Joe E. Lucco (D-56th)
Vice Chairman, Senator John J. Nimrod (R-4th)
Secretary, Dr. James P. Hartnett, Chicago

Legislative Members:

Senator Kenneth B. Buzbee (D-58th)
Senator Gene Johns (D-59th)
Senator John L. Knuppel (D-48th)
Senator Robert W. Mitchler (R-39th)

Rep. Ralph Dunn (R-58th)
Rep. Adeline J. Geo-Karis (R-31st)
Rep. Richard O. Hart (D-59th)
Rep. Daniel M. Pierce (D-32nd)

Public Members:

Richard C. Gallagher, Chicago
John Gordon, Rockford
Tor Kolflat, Winnetka
Paul Lingo, Carlinville
Donald E. Schmitt, Streator
Eugene E. Voiland, Morris
Dale Wade, Breese

III. PA 78-1125, PA 78-1122 and PA 80-432

ILLINOIS ENERGY RESOURCES COMMISSION

PUBLIC ACT 78-1125

HOUSE BILL 2651

An Act creating the Illinois Energy Resources Commission and defining its powers and duties.

Be it enacted by the People of the State of Illinois, represented in the General Assembly:

Section 1. (S.H.A. ch. 93, Sec. 301)

There is created the Illinois Energy Resources Commission, hereinafter in this Act called the Commission.

The Commission shall consist of 3 members of the House of Representatives and two public members all appointed by the Speaker of the House; 2 members of the House of Representatives and 2 public members all appointed by the Minority Leader of the House; 3 members of the Senate and two public members all appointed by the President of the Senate; 2 members of the Senate and 2 public members all appointed by the Minority Leader of the Senate.

The Commission shall select from its membership a Chairman who shall be a legislative member and any other officers it considers necessary. The Chairmanship of the Commission shall rotate biannually between the houses of the General Assembly in accordance with the appointment schedule set forth in Section 2 of this Act,[1] except that the member of the General Assembly elected to be the first Chairman of the Commission shall be eligible to succeed himself for a second, consecutive term as Chairman.

The Commission shall meet at the call of the Chairman after due and reasonable notice to all Commission members, except that a majority of the Commission members may convene a meeting of the Commission in the event the Chairman refuses to do so.

[1]Chapter 93, Sec. 302.

Sec. 2. (S.H.A. ch. 93, Sec. 302)

The initial membership shall be appointed within thirty days after the effective date of this Act, and serve until June 30, 1975. Thereafter, the membership shall be appointed during the month of June in each odd numbered year and shall serve terms of two years, beginning on July 1 of the year in which they were appointed, or until their respective successors are appointed. All appointments must be in writing and filed with the Secretary of State as a public record.

Vacancies in the membership of the Commission shall be filled in the same manner as the original appointments. Members of the Commission shall serve without compensation, but shall be reimbursed for actual expenses incurred in the performance of their duties.

Sec. 3. (S.H.A. ch. 93, Sec. 303)

The Commission shall:

(1) Study, review and make recommendations on the administrative structure the State should adopt for the efficient management of the State's effort in finding solutions to energy related problems;

(2) study, review and make recommendations to coordinate the proposed or ongoing programs of the various State agencies with reference to the solution of energy related problems;

(3) study and make recommendations concerning a long-range program relating to energy resources and related problems, including but not limited to conservation of energy, development of energy resources, environmental considerations and other related problems;

(4) seek the cooperation and assistance of energy producers, institutions of higher education, energy research institutions, and other public and private organizations and groups interested in finding solutions to energy related problems;

(5) promote the establishment by the federal government of a coal resource, research and development center and other federal energy projects in Illinois, and search for additional or other means of using Illinois coal to meet Illinois' energy needs with due attention to environmental priorities;

(6) disseminate relevant information to the public for purposes of consumer education and protection.

Sec. 4. (S.H.A. ch. 93, Sec. 304)

All proposed projects under the program of capital development of coal resources funded through the sale of general obligation bonds created in "An Act to provide for the financing of a State program for research, development and demonstration in coal and energy; to authorize the issuance and sale of general obligation bonds of the State of Illinois; and to provide for the payment of the principal of and interest on such bonds," enacted by the 78th General Assembly, shall be submitted for review and by a majority vote approval or rejection by the Commission. The Commission shall review and by a majority vote approve or reject each such project and a dollar cost range. Such review and approval or rejection shall be made within 45 days of the receipt of each proposal by the Commission.

No expenditure of general obligation bond funds for the development of coal resources shall be made without the prior approval of the specific project by the Commission, except that a specific proposal shall be deemed to be approved if the Commission fails to act within the 45 day period.

Sec. 5. (S.H.A. ch. 93, Sec. 305)

The Commission may, without regard to the Personnel Code, employ or contract for the personnel and services necessary to develop the capability of analyzing and making recommendations to the Commission pursuant to the provisions of this Act.

Sec. 6. (S.H.A. ch. 93, Sec. 306)

In aid of the Commission's work, all departments, divisions, agencies and offices of the State shall afford to the Commission any requested resources, information, records, or advice pertinent to the subject matter under study.

Sec. 7. (S.H.A. ch. 93, Sec. 307)

In the performance of its duties, the Commission may accept grants or funds from the federal government, foundations, or other public or private organizations.

Sec. 8. (S.H.S. ch. 93, Sec. 308)

The Commission shall submit an annual report of its findings and recommendations to the General Assembly, no later than March 15th of each year.

Section 9. (S.H.A. ch. 93, Sec. 301 note) This Act shall take effect upon its becoming law.

Approved and effective Aug. 19, 1974.

COAL DEVELOPMENT BOND ACT

PUBLIC ACT 78-1122

SENATE BILL 1659

An Act to provide for the financing of a State program for research, development and demonstration in coal and energy; to authorize the issuance and sale of general obligation bonds of the State of Illinois; and to provide for the payment of the principal of and interest on such bonds.

Be it enacted by the People of the Stateof Illinois, represented in the General Assembly;

Section 1. (S.H.A. ch. 93, Sec. 401) Short title

This Act shall be known and may be cited as "The Illinois Coal Development Bond Act".

Sec. 2. (S.H.A. ch. 93, Sec. 402)

As used in this Act, "coal" or "coal resources" include coal, coal products or by-products, including electricity and synthetic gas. "Development of coal resources" includes research, development, and demonstration of improved methods of discovery, production, transportation, sale, distribution, conversion, end-use and waste disposal of coal resources.

Sec. 3. (S.H.A. ch. 93, Sec. 403)

The Department of Business and Economic Development shall have the following powers and duties:

a) To solicit, accept and expend gifts, grants or any form of assistance, from any source, including but not limited to, the federal government or any agency thereof;

b) To enter into contracts with business, industrial, university, governmental or other qualified individuals or organizations to promote development of coal resources. Such contracts may be for, but are not limited to, the following purposes: (1) the commercial application of existing technology for development of coal resources, (2) to initiate or complete development of new technology for development of coal resources, and (3) for planning, design, acquisition, development, construction, improvement and financing a site or sites and facilities for establishing plants, projects or demonstration for development of coal resources; and

c) In exercise of the other powers grants to it under this Act, to acquire property, real, personal or mixed, including any rights therein such as mineral or water rights, by exercise of the power of condemnation in accordance with the procedures provided by "An Act to provide for the exercist of the right of eminent domain", approved April 10, 1872, as amended.[1]

[1]Chapter 47, Sec. 1 et seq.

Sec. 4. (S.H.A. ch. 93, Sec. 404)

The Illinois Energy Advisory Council on Coal Development, referred to in this Act as the "Council" is created.

The Council shall be composed of the Governor, the Lieutenant Governor, the Director of the Department of Business and Economic Development, the Chairman of the Capital Development Board, the Director of the Department of Mines and Minerals, the Secretary of the Department of Transportation, the Chief of the Illinois Water Survey, the Chief of the Illinois Geological Survey, the Chairman of the Illinois Commerce Commission and the Director of the Environmental Protection Agency.

The Governor shall serve as chairman of the Council and the Lieutenant Governor as vice-chairman.

Sec. 5. (S.H.A. ch. 93, Sec. 405)

The Council shall convene at the call of the Chairman. It shall advise the Department of Business and Economic Development in relation to projects authorized under this Act and shall offer to the Department such recommendations as it deems appropriate for the development of the coal resources of Illinois. The Council may also assist the Department in securing matching funds for projects authorized under this Act.

Sec. 6. (S.H.A. ch. 93, Sec. 406)

The Department of Business and Economic Development is authorized to use $70,000,000 for the purposes specified in this Act. These funds shall be expended only on projects for which previous approval of the Illinois Energy Resources Commission has been granted.

Sec. 7. (S.H.A. ch. 93, Sec. 407) Bonds

The State of Illinois is authorized to issue, sell and provide for the retirement of general obligation bonds of the State of Illinois in the amount of $70,000,000 hereinafter called "Bonds", for the specific purposes of acquisition, development, construction, reconstruction, improvement, financing, architectural and technical planning and installation of capital facilities consisting of buildings, structures, durable equipment, and land for the purpose of capital development of coal resources. The aggregate amound of bonds which may be authorized by this Act is $70,000,000.

Sec. 8. (S.H.A. ch. 93, Sec. 408) Sale of bonds

. . .

Sec. 9. (S.H.A. ch. 93, Sec. 409) Authentication of bonds

. . .

Sec. 10. (S.H.A. ch. 93, Sec. 410) Bond proceeds

. . .

Sec. 11. (S.H.A. ch. 93, Sec. 411) Expenditure of funds

. . .

Sec. 12. (S.H.A. ch. 93, Sec. 412) Investment of proceeds

. . .

Sec. 13. (S.H.A. ch. 93, Sec. 412) Repayments

. . .

Sec. 14. (S.H.A. ch. 93, Sec. 414) Bond repayment - General obligations

. . .

Sec. 15. (S.H.A. ch. 93, Sec. 415) Default

. . .

Sec. 16 (S.H.A. ch. 93, Sec. 416) Treasurer and Comptroller

. . .

Sec. 17. (S.H.A. ch. 93, Sec. 417) Refunding bonds

. . .

Sec. 5. (S.H.A. ch. 127, Sec. 141)

. . .

Sec. 19. (S.H.A. ch. 03, Sec. 418) Severability

If any Section, sentence, or clause of this Act is for any reason held invalid or to be unconstitutional, such decision shall not affect the validity of the remaining portions of this Act.

Section 20. (S.H.A. ch. 03, Sec. 401, ch. 127, Sec. 141 notes.) This Act takes effect immediately upon its becoming law.

Approved and effective Aug. 19, 1974.

*Sec. 8 - 17 of Public Act 78-1122 describes the bonding authority and procedure of the coal development bonds.

An ACT to amend Sections 1, 2, 3 and 7 of "The Illinois Coal Development Bond Act", approved August 19, 1974, as amended.

Be it enacted by the People of the State of Illinois represented in the General Assembly:

Section 1. Sections 1, 2, 3 and 7 of "The Illinois Coal Development Bond Act", approved August 19, 1974, as amended, are amended to read as follows:

(Ch. 93, par. 401)

Sec. 1. Short title. This Act shall be known and may be cited as "THe Illinois Coal and Energy Development Bond Act".

(Ch. 03, par. 402)

Sec. 2. As used in this Act, "coal" or "coal resources" include coal, coal products or by-products, including electricity and synthetic fuels. "Development of coal resources" includes research, development, and demonstration of improved methods of discovery, production, transportation, sale, distribution, conversion, end-use and waste disposal of coal resources. "Other forms of energy" includes solar energy, geothermal, wind generation, solid waste or any other energy system except that which is generated by nuclear energy.

(Ch. 93, par. 403)

Sec. 3. The Department of Business and Economic Development shall have the following powers and duties:

(a) To solicit, accept and expend gifts, grants or any form of assistance, from any source, including but not limited to, the federal government or any agency thereof;

(b) To enter into contract with business, industrial, university, governmental or other qualified individuals or organizations to promote development of coal and other energy resources. Such contracts may be for, but are not limited to, the following purposes: (1) the commercial application of existing technology for development of coal resources, (2) to initiate or complete development of new technology for development of coal resources, and (3) for planning, design, acquisition, development, construction, improvement and financing a site or sites and facilities for establishing plants, projects or demonstrations for development of coal resources, and research and development of other forms of energy; and

(c) In the exercise of other powers granted it under this Act, to acquire property, real, personal or mixed, including any rights therein, by exercise of the power of condemnation in accordance with the procedures provided by "An Act to provide for the exercise of eminent domain", approved April 12, 1872, as amended,

provided, however, the power of condemnation shall be exercised solely for the purposes of siting and/or rights of way and/or easements appurtenant to coal utilization and/or coal conversion projects. The Department shall not exercise its powers of condemnation until it has used reasonable good faith efforts to acquire such property before filing a petition for condemnation and may thereafter use such powers when it determines that such condemnation of property rights is necessary to avoid unreasonable delay or economic hardship to the progress of activities carried out in the exercise of powers granted under this Act. After June 30, 1985, the Department shall not exercise its power of condemnation for a project which does not receive State or U.S. Government funding. Before use of the power of condemnation for projects not receiving State or U.S. Government funding, the Department shall hold a public hearing to receive comments on the exercise of the power of condemnation. The Department shall use the information received at hearing in making its final decision on the exercise of the power of condemnation. The hearing shall be held in a location reasonably accessible to the public interested in the decision. The Department shall promulgate guidelines for the conduct of the hearing.

(Ch. 03, par. 407)

Sec. 7. Bonds. The State of Illinois is authorized to issue, sell and provide for the retirement of general obligation bonds of the State of Illinois in the amount of $70,000,000 hereinafter called "Bonds", $65,000,000 of which shall be for the specific purposes of acquisition, development, construction, reconstruction, improvement, financing, architectural and technical planning and installation of capital facilities consisting of buildings, structures, durable equipment, and land for the purpose of capital development of coal resources, and $5,000,000 of which shall be for research and development of other forms of energy. The aggregrate principal amount of bonds which may be authorized by this Act is $70,000,000.

Section 2. This amendatory Act of 1977 takes effect upon its becoming a law.

IV. HISTORY OF THE ILLINOIS ENERGY RESOURCES COMMISSION

The Illinois Energy Resources Commission is a joint House/Senate Legislative Commission composed of 8 public and 10 legislative members. The Commission is mandated by the General Assembly to approve funding requests from Illinois' &70 Million Coal Development and Energy Bond Act, which includes $65 Million for coal development and $5 Million for alternate energy programs. The Commission also has the responsibility for development of a long range energy plan for the state, coordination of energy programs of various state agencies and universities, promotion of federally funded energy systems within Illinois, and dissemination of information to the public. The Illinois Energy Resources Commission was established by the 78th General Assembly (Public Act 78-1122). The first meeting of the Commission was held January 30, 1975.

The Commission began it's work with a series of 12 public hearings held throught Illinois that solicited opinions from representatives of all energy sectors and from the general public on the role that the State should take in regard to the development of an effective energy policy.

As a result of these hearings, six energy study panels were established in the areas of coal, solar, electric utilities, solid waste and biomass, energy conservation, and natural gas and petroleum. The panels reviewed and analyzed the results of the public hearings and made specific recommendations in the above mentioned areas. Reports on these findings and recommendations are available throught the Commission office.

Under its mandate as a Commission of the General Assembly, the IERC has as a chief priority the research, development and introduction of legislation to improve the energy picture within Illinois.

During the 1977 Session of the General Assembly, energy legislation received considerable attention. Of the 90 energy-related bills introduced in this Session, the IERC approved the introduction of 41, 16 of which passed the General Assembly.

Legislative contributions of the IERC are further noted in pages 22 through 28 of this Annual Assembly.

A principal concern of the Illinois General Assembly in creating the IERC was to further the development of Illinois' vast coal reserves. A key toward increased use of these reserves is development of more effective and efficient technology which will minimize the amount of sulfur dioxide, an air pollutant, produced in the consumption of the coal. Coal development projects involving the Commission are detailed on pages 39 through 44 of this Annual Report.

V. PRINCIPAL RESPONSIBILITIES OF COMMITTEES

A. EXECUTIVE COMMITTEE, Representative Joe Lucco, Chairman

The Executive Committee acts with the full power and authority of the Commission except where major policy is being affected or previous actions of the Commission are being modified.

The Executive Committee is responsible for seeking the cooperation and assistance of energy producers, institutions of higher education, energy research institutions, and other organizations interested in finding solutions to energy related problems.

B. ALTERNATIVE ENERGY COMMITTEE, Representative Adeline J. Geo-Karis, Chairman

The Committee studies, reviews and makes recommendations on all alternative energy proposals. In connection with this, it conveys studies and other materials to the Legislative Committee for the development of legislation. The Alternative Energy Committee has responsibility for disbursing the $5,000,000 mandated under House Bill 1537 for research, development, and production of alternative energy resources.

C. COAL BOND COMMITTEE, Representative Richard Hart, Chairman

The Coal Bond Committee evaluates requests for coal-related projects and makes recommendations on disbursement of the $65,000,000 provided under the Coal Development Bond Act. The Committee provides the Legislative Committee with material and studies dealing with coal development.

D. CONSERVATION COMMITTEE, Senator Gene Johns, Chairman

The Conservation Committee gathers information on energy conservation and related topics, determining the applicability of proposed conservation measures to Illinois' needs. It reviews appropriations of State funds for energy conservation efforts; and helps promote conservation practices in residential, commercial, industrial, transportational, and governmental sectors of Illinois. The Committee is further responsible for conveying recommendations to the Legislative Committee for the development of legislation.

E. EDUCATION COMMITTEE, Representative Ralph Dunn, Chairman

The Education Committee collects and disseminates information for the education and the protection of the general public, consumers, industry, local governments and relevent sectors of the public. The Committee also promotes energy awareness programs at state and regional levels; and it conveys materials, studies and recommendations to the Legislative Committee for the development of legislation.

F. INTERGOVERNMENTAL COMMITTEE, Representative Daniel Pierce, Chairman

The Intergovernmental Committee monitors the energy efforts of State agencies, educational institutions, and local governments. It makes recommendations on energy appropriations of various agencies' budgets.

The Committee acts to coordinate proposed or ongoing State programs that pertain to the solution of energy-related problems. Additionally, the Committee receives and conveys requests for energy-related funds and for Commission endorsement of energy programs. It provides studies and recommendations to the Legislative Committee for the development of legislation.

G. LEGISLATIVE COMMITTEE, Senator Kenneth Buzbee, Chairman

The Legislative Committee is responsible for developing energy legislation for the State of Illinois. It is further charged with reviewing such legislation in other states and on the federal level to determine any ratifications for Illinois.

The Committee drafts amendments to Illinois legislation during Committee or floor action of the General Assembly, so that such legislation agrees with the policy direction of the Commission.

H. PLANNING COMMITTEE, Senator Robert Mithcler, Chairman

The Planning Committee is charged with developing the energy policy directions of the Commission. It monitors and makes recommendations on the Five-Year Contingency Plan and the Energy Policy and Conservation Act, submitted to the Federal Government by the Illinois Division of Energy, Department of Business and Economic Development. The Committee also is responsible for conveying materials, recommendations and studies to the Legislative Committee for the development of legislation.

I. TECHNICAL COMMITTEE, Senator John Nimrod, Chairman

The Committee reviews, evaluates, and makes recommendations concerning the technical content of funding requests received by the Commission. It represents the Commission on technical matters at state and national hearings and conferences. The Committee works with the Division of Energy on technical aspects of proposed coal development and alternative energy projects; and this Committee conveys material, recommendations and studies to the Legislative Committee for the development of legislation.

VI. ENERGY HIGHLIGHTS

A. Commission Meetings

March 28, 1977	Springfield
May 9, 1977	Springfield
July 25, 1977	Chicago
September 27, 1977	Chicago
October 24, 1977	Springfield
January 11, 1978	Springfield
March 23, 1978	Springfield

B. REPORTS OF IERC STUDY PANELS AND SUMMARY REPORT

In wake of the Arab oil embargo in the fall of 1973, the Illinois General Assembly established the Illinois Energy Resources Commission to provide legislative leadership in the development of an energy policy for the State. The Act creating the Commission states: "The Commission shall study and make recommendations concerning a long-range program relating to energy resources and related problems, including but not limited to conservation of energy, development of energy resources, environmental considerations and their related problems."

In keeping with this charge, the Commission established, under the chairmanship of Senator John Nimrod, the following six study panels in the spring of 1976 to deal with topics of importance to the energy future of Illinois: Coal; Electric Utilities (including nuclear); Energy Conservation; Solar; Solid Waste and Biomass, and Natural Gas and Petroleum. Each panel was composed of approximately 20 specialists drawn from federal, state and local government; industry; agriculture; research institutes and institutions of higher education; national and state laboratories; and public and private organizations concerned with energy-related issues.

Over the course of the next 18 months, each panel produced a report on its assigned topic. The Executive Summary of Recommendations of the Study Panels of the IERC was published during the past year. Each chapter of the Summary contains a summary of the findings and complete recommendations of one study panel. The following recommendations represent a sampling of the scope and content of the full publication prepared by each panel. For more complete information, readers may refer to the individual reports, which are available through the IERC.

EXAMPLES OF RECOMMENDATIONS OF STUDY PANELS

Coal

1. Develop a long-range state policy on energy, including conservation in a national context, which allows for the orderly growth of all aspects of the coal industry in addition to growth of all other present and future energy sources. It is recommended that programs be developed that will consider all aspects of meeting state needs, including mineral development, agriculture, urban expansion, surface and underground mining, highways, preservation of natural areas, major industrial and commercial plant siting, etc.
2. Examine the economic and technical feasibility of formulating state regulations relating to coal, and analyze costs and benefits resulting from such regulations. The social and economic impacts of regulation on factors such as coal imports and exports, air and water quality, surface mine reclamation, stack gas cleaning and other control technology, coal conversion plant costs, siting, subsidance control, and tax policy should be examined.
3. Continue the policy of attracting demonstration projects for coal utilization and broaden the emphasis for state support of technological developments such as fluidized bed combustion, form coke, coal chemicals, and coal desulfurization that can permit more general use of Illinois coals while meeting adequate environmental requirements.
4. Support research that has the potential of expanding the current use of Illinois coal.

Electric Utilities

1. Permit rapid write-off of all pollution control equipment.
2. Increase the authorized amounts of pollution control bonds issued by the Illinois Pollution Control Financing Authority (IPCFA) or amend statutes limiting the application of IPCFA financing to the amount of bonds outstanding rather than to the amount that has been issued.
3. Streamline the procedure by which a company obtains pollution control funding by allowing loan agreements.
4. Appoint a committee to study the need for siting legislation in Illinois and to explore the factors: economic; technical; environmental; administrative; and legal, affecting the siting of energy conversion facilities.

Energy Conservation

1. Implement energy conservation programs in state-controlled buildings, beginning with those programs having the most favorable benefit-to-cost ratio.
2. Modify existing building codes to eliminate excessive energy use.
3. Adopt life-cycle costing as the main economic criterion for state construction projects and state equipment purchases.
4. Provide incentives, through tax credits, to industries for the purchase of energy-conserving equipment.

Solar Energy

1. Support a comprehensive study of the effect of various applications of solar energy on the utility industry. Such a study should determine whether pricing policies of the utilities in Illinois encourage or discourage the use of solar energy. It would also provide the basis for a fair and equitable rate structure.
2. Encourage the development of pilot solar technician training programs at community colleges and other educational institutions.
3. Provide incentives for early development of solar energy applications. These could be financial incentives, to individuals and/or institutions, applied over limited periods of time, until the cost-effectiveness of solar energy applications is established. Such incentives should cover "passive" solar energy utilization and conservation as well as "active" solar utilization.

Solid Waste and Biomass

1. Prepare and implement a state waste management plan to comply with the provisions of Public Law 94-580.
2. Fund full-scale solid waste demonstration projects at the local, regional or state level.
3. Develop and implement an educational program for municipalities on the use of solid waste as fuel.
4. Provide funds, in conjunction with relevant federal programs, to permit the appropriate state agency to initiate biomass research and planning.

Petroleum and Natural Gas

1. Support the Federal Government in actions that will increase exploration for and development of domestic oil and natural gas supplies.
2. Express to the federal governments the State's position that the pipeline for Alaska (and possibly Canada) should be constructed to deliver to the Midwest and to the East.
3. Oppose any federal program for the reallocation of natural gas, both gas brought into the State by Illinois utilities and gas manufactured within the State by Illinois utilities, to other states except in a national emergency.

Senator John J. Nimrod
Chairman, Technical Committee

Dr. James P. Hartnett
Panel Coordinator

STUDY PANELS

COAL

Jack A. Simon, Chairman
Dr. James P. Hartnett, Technical Secretary

ELECTRICAL UTILITIES

Robert J. Podlasek, Chairman
P. V. Sudhindra, Technical Secretary

ENERGY CONSERVATION

David L. Grumman, Chairman
Paul S. Galen, Technical Secretary

SOLAR ENERGY

Walter L. Borst, Panel Chairman
S. H. Butt, Panel Co-Chairman
P. V. Sudhindra, Technical Secretary

SOLID WASTE AND BIOMASS

Harold L. Koenig, Chairman
Paul S. Galen, Technical Secretary

PETROLEUM AND NATURAL GAS

J. Cordell Moore, Chairman
Paul S. Galen, Technical Secretary

C. TASK FORCES

In 1977-78, the Illinois Energy Resources Commission established two task force groups, under the legislative committee -- the Coal Utilization Task Force and the Electric Utilities Task Force -- as a continuance of the work of the IERC Study Panels of the previous year. The Task Forces were asked to suggest priorities in regards to study panel recommendations and to develop specific policy and legislative proposals for the State.

As a result of the expertise of the Task Force membership, numerous and well prepared legislative and policy proposals were developed and presented to the IERC for consideration in 1978.

Coal Utilization Task Force

The Coal Utilization Task Force was established to investigate potential advantages and problems associated with the expected increased demand for Illinois coal, and to recommend specific policy criteria, legislation, and coal-related research projects to the Commission. The Task Force consisted of representatives of various organizations concerned with the use of Illinois coal. Included were representatives of state and federal government; coal associated organization; and industry and consumer, environmental and transportation interests.

The primary objective of the Task Force was to review the report and recommendations of the Coal Study Panel of 1975-76 and to recomment mechanisms for implementation.

The Coal Utilization Task Force, chaired by IERC public member Paul Lingo, was divided into a Coal Development Committee and a Coal Transportation Committee.

The Coal Development Committee, chaired by Jack Simon of the Illinois Geological Survey, developed several key legislative recommendations, including a Coal Policy Statement, Coal Marketing Program with BED, and a temporary Coal Conversion Tax Exemption. The Coal Development Committee also identified several project proposals which would be carried out by various research groups in the State.

The Coal Transportation Committee, chaired by Gerald Rawling of the Illinois Department of Transportation, has undertaken the task of reviewing the various modes of transporting coal in Illinois, and of assessing future transportation problems, both economic and geographical, in meeting the expected increased demand for Illinois coal.

Electric Utilities Task Force

The Electric Utilities Task Force was established to investigate the issue of siting for energy conversion facilities, as recommended in the Report of the IERC Electric Utility Study Panel. Tor Kolflat, an IERC public member, was appointed as the Task Force Chairman. The Task Force membership was comprised of representatives from state gov-

ermental agencies; the General Assembly; public utilities; and consumer, environmental, and agricultural groups and other associations.

The Task Force was assigned to study the criteria and guidelines necessary for the selection of suitable power plant sites; mechanisms for approving the environmental and social-economic acceptability of such sites; the means for insuring long-term availability of suitable sites for future use; and an orderly system for consolidation and coordination of the permits required from various state and local agencies in order to construct a new facility.

The Task Force is currently studying the issues that are essential in developing a power plant siting program, including various alternatives for addressing these issues. From this detailed analysis, the Task Force will develop specific legislation best suited to regulating the siting and certification of new electrical facilities in Illinois.

D. LEGISLATIVE ACTION

In the 1977 Session of the 80th Illinois General Assembly, the topic of energy received considerable legislation. Over 90 energy-related bills were introduced in the 1977 Session, with 23 receiving passage of both Houses, and 8 enacted into law. The subject of this legislation included the areas of 1) utility and date reform; 2) coal development and research; 3) environmental standards; 4) resource recovery; 5) solar energy; 6) energy education and information; 7) energy planning; 8) energy conservation; 9) administrative reorganization of energy-related agencies.

The Illinois Energy Resources Commission was instrumental in the development and introduction of a substantial portion of the energy legislation in 1977. The Commission approved the introduction of some 41 legislative proposals, the following 16 of which passed both Houses of the General Assembly:

HB 747 (Levin) - prohibits utilities from charging higher tax because of solar energy systems;
HB 1279 (Geo-Karis) - allows $5 M for research of alternative energy sources excluding nuclear;
HB 1454 (Geo-Karis) - rules for IERC concerning proposals;
HB 1521 (Lucco) - allows IERC to coordinate Federal Programs with state and local agencies;
HB 1748 (Schisler) - tax incentives for solar grain drying and water heating systems;
HB 1749 (Schisler) - energy conservation to be practiced by state agencies;
HB 2187 (Geo-Karis) - Department of Transportation to aid counties, cities and towns in regard to traffic flow, light synchronizing and preferential lanes;
HB 2238 (Geo-Karis) - allows the Department of Transportation to establish car pools;
HB 2310 (Geo-Karis) - allows IERC to accept gifts, grants and bequests;
SB 740 (Knuppel) - regulations for commuter vans;
SB 834 (Buzbee) - requires state agencies to do cost analyses for energy conservation practices in new or renovated state facilities;
SB 889 & 890 (Buzbee) - State Board of Education to study feasibility of solar energy as a power source for both public schools, universities and colleges;
SB 907 (Buzbee) - energy conservation with respect to standing pilot light equipment;
SB 944 (Nimrod) - creates Comprehensive Solar Energy Act, and
SB 1142 (Nimrod) - which creates Department of Mines and Energy.

Seven other energy bills were also passed:

HB 222 (Richmond) - air pollution standards during energy emergencies;
HB 491 (Winchester) - deals with school closings during energy emergencies;
HB 691 (McGrew) - allows school districts to use tax for energy conservation practices;
SB 39 (Johns) - deals with Coal Severance Tax Act;
SB 93 (Donnewald) deals with mine holes and holes drilled to explore coal;
SB 281 (Donnewald) - deals with ambient air quality standards, and
SB 480 (Rock) - deals with the use of gas transmission facilities.

IERC ENDORSED LEGISLATION PASSED AND SIGNED BY THE GOVERNOR

BILL #	SPONSORS	AREA OF INTEREST	SUMMARY OF BILL	FINAL 1977 ACTION
HB 747	Levin Buzbee	Solar, Exemption	Amends public utility Act. Prohibits a public utility which provides electrical or gas service from charging higher rates to customers who utilize solar energy. Exempt after 5 yrs.	Public Act 80-431
HB 1279	Geo-Karis Knuppel	Alternative Energy, Bond Funds	Amends Coal Development Bond Act. Allocates $5 M of the bonds for research and development of other forms of energy, excluding nuclear.	Public Act 80-432
HB 1749	Schisler Knuppel	Education, Energy Planning	Directs the Board of Higher Education to develop for submission to the Governor and General Assembly, a comprehensive energy plan for public universities and colleges.	Public Act 80-433
HB 2187	Geo-Karis Knuppel	Energy Conservation, Transportation	Authorizes the Dept. of Transprotation to provide planning, traffic flow, light synchronizing, preferential lanes for car pools, and carpool parking assistance to local governments.	Public Act 80-1016
HB 2310	Geo-Karis Soper	IERC, Expand Mandate	Authorizes IERC to accept gifts, grants, and other forms of energy-related assistance from any source and to notify General Assembly of acceptance.	Public Act 80-901
SB 740	Knuppel Byers	Energy Conservation, Transprotation	Amends Ill. vehicle code and an Act concerning public utilities. Defines commuter vans and sets certain standards. Sets insurance criteria and provides that a commuter van is not a common carrier.	Public Act 80-529

BILL #	SPONSORS	AREA OF INTEREST	SUMMARY OF BILL	FINAL 1977 ACTION
SB 907	Buzbee Lucco	Energy Conservation Gas-Fired Pilot lights	Amends the Act concerning public utilities. Requires the Ill. Commerce Commission to conduct a study into the feasibility of an energy conservation program with respect to standing pilot light equipment.	Public Act 80-697
SB 944	Nimrod Geo-Karis	Solar, Comprehensive Education, Incentives	Creates the Comprehensive Solar Energy Act. Authorizes the Division of Energy, BED to establish demonstration programs, conduct studies, establish incentives, and provide information regarding solar energy. Defines solar energy systems.	Public Act 80-430

E. 1978 PROPOSED LEGISLATION

The following legislative concepts were proposed for Commission endorsement preparatory to the 1978 Session of the General Assembly:

1. Coal Policy Resolution -- Establishes that a policy of the State shall be to encourage the use of Illinois' coal resources whenever economically and environmentally feasible in lieu of other fossil fuels.

2. BED-Promote Illinois Coal -- Amends the powers and duties of the Department of Business and Economic Development. Specifies that the Department shall develop a program to promote the sale and marketability of Illinois coal to interstate and foreign markets. Allows the Department to hire additional personnel to carry out the provisions of this Act.

3. Temporary Coal Conversion Tax Exemption -- Eliminates the state sales tax on industrial equipment used to convert energy generating and heating systems from natural gas and oil to coal. Defines coal conversion equipment. Requires that the sales tax exemption shall be in effect until 1985.

4. Power Plant Siting -- Enacts the Energy Generating Facilities Siting Act. Creates a two-stop siting process with the Illinois Commerce Commission responsible for the forecasting and need review aspects and the Illinois Environmental Protection Agency conducting the environmental assessment of proposed sites. Creates an independent review board comprised of the 5 member Pollution Control Board and four public members appointed from the district where the proposed site is situated. Review board is responsible for weighing technical information concerning environmental and social impacts of a site.

5. (a) Gasohol - Motor Fuels Tax Exemption -- Defines gasohol and provides for a 4 cent per gallon reduction in the tax on gasohol until June 30, 1980.

   (b) Alternative Fuels - Creates Research Fund -- Provides that one-eighth of one cent of the State Motor Fuels Tax be allocated to a special Alternative Motor Fuel Research Fund for a period of two years. Monies from this fund are to be utilized for research and development of alternative motor fuels. Defines alternative motor fuels.

6. New Home Insulation and Heating Disclosure Act -- Authorizes the Division of Energy, B.E.D., to develop and administer a program requiring all the sellers of new residential homes to provide data on the projected annual heating cost before a sale. The Division of Energy is to develop a standard form for calculation of the heating requirements based on heating and insulating criteria. Excluded multi-family units. Failure to comply with provisions of the Act will provide grounds for a purchaser to refuse to take title or possession.

7. Energy Consumption Analysis on Construction Act -- Requires those state agencies which have jurisdiction over state owned and operated facilities to analyze the cost of energy consumption of each planned construction or renovation project over the economic life of that facility (life-cycle costing).

8. Reorganization of Energy-related Agencies -- Creates a cabinet level energy department by combining the energy-related powers and duties of the Division of Energy, the Governor's Office of Manpower and Human Development, and the Illinois Institute for Environmental Quality.

9. Supplimental Appropriation CDB/Energy Audits -- Appropriates $200,000 to the Capital Development Board for technical energy audits of state school districts. Establishes a voluntary program with schools to solicite the audit.

10. Energy Conservation Retrofit for Public Schools -- Provides for state match funds to finance an energy conservation retrofit program for state schools. (Part II of the National Energy Policy Act pending in Congress authorizes funds on a 50/50 match for preliminary audits, technical audits, and retrofit projects to public and private schools, health facilities, and certain local buildings). Authorizes the sale and issuance of bonds for finaacing the conservation school program.

11. Thermal and Lighting Standard Act -- Requires the Department of Business and Economic Development to adopt State Building Codes relating to thermal and lighting efficiency standards. Creates an Advisory Board to promulgate the code based upon A.S.H.R.A.E. Standard 90-75. (Thermal and Lighting Standards are required by the federal government for additional funding under the EPCA Act of 1975).

12. Procurement Efficiency Standards -- Requires the Department of Administrative Services to adopt procedures to purchase products and equipment based upon the energy efficiency over the life of the product. (Procurement Standards are required by the federal government for additional funding under the EPCA Act of 1975).

13. Ride Sharing Incentives -- Adopts certain vanpool regulations including the exemption of employer-sponsored vanpools from personal injury liability; designation of 12 passenger vans as first division vehicles; and incentives to promote corporate and public ride-sharing programs.

14. Suspend Hydrocarbon Pollution Control -- Allows utilities which utilize a natural gas fired after burner for hydrocarbon emission control to suspend use of such device between the months of December to March. (U.S. EPA reports indicate that hydrocarbon emissions are not substantial during cold weather months).

15. Insulation in New Construction -- Requires insulation in new construction to comply with federal standards.

16. St. Clair County Proposal -- Appropriates $225,000 to the Department of Business and Economic Development for a feasibility study of establishing an industrial park in St. Clair County which utilizes the newest energy technologies including a total integrated energy system.

17. Solar Energy - New State Agriculture Building -- Makes a supplemental appropriation to the Capital Development Board for matching funds to install a solar energy water and space heating unit for the new agricultural building at the State Fairgrounds. (CDB has submitted a grant request of $1,077,844 to the U.S. Department of Energy for this project).

18. Coal Blending -- Appropriates $30,000 to the Department of Business and Economic Development for the development of a proposal to the federal government concerning blending of high sulfur Illinois coal with incoming western coal.

F. ENERGY OUTLOOK MEETINGS

Regional Energy Outlook Meetings were held by the Commission and local Chambers of Commerce on October 21, Decatur; October 31, Rock Island; November 1, Rockford; November 14, Edwardsville; and November 21, Waukegan.

The IERC and the Chambers held the meetings in the belief that area residents wanted to know not only their prospects for energy supplies during the winter, but also their long-range possiblities for heat, power, and light. It was also believed to be important that area residents be informed as to what the State was doing in terms of the energy situation.

Interesting and valuable information delivered by outstanding national and state level speakers made these meetings particularly valuable and successful. Because of the good response to the meetings, a joint proposal authorizing more of them next year was made by the Commission, the Division of Energy, and the U.S. Department of Energy.

G. ILLINOIS ENERGY CONFERENCE

The Fifth Annual Illinois Energy Conference, held in Chicago, during September 1977, was co-sponsored by the Energy Resources Center of the University of Illinois at Chicago Circle, the U.S. Energy Research and Development Administration (Currently the Department of Energy), and the Illinois Energy Resources Commission. The theme of the meeting, "Energy Policy Options for Illinois," was chosen because of the intensive effort over the past few years at both the national and state level to develop an energy policy and long-range energy program. Proposals for a state energy policy and the problems involved in implementing them were examined at the conference, including the effects of regional, national, and international policies on a state energy plan. In Illinois efforts towards developing a state program have been concentrated in the Governor's Office; in the Division of Energy, Department of Business and Economic Development; and in the Illinois Energy Resources Commission.

Chairman of the conference Planning Committee was Dr. James P. Hartnett, Director, Energy Resources Center, and Secretary, Illinois Energy Resources Commission. Other members included representatives from the energy industry; industrial and government research laboratories; local, state, and federal agencies; and universities. The committee decided the 21/2-day conference should include sessions on:

An Overview of U.S. and Illinois Energy Policy
Energy Policy: Conservation-Solar-Biomass and Solid Waste
Energy Policy: Petroleum and Natural Gas
Energy Policy: Coal and the Electric Utilities
Economic and Consumer Concerns

The excellent quality of the resulting program reflected considerable time and effort on the part of the speakers in the preparation of their papers. The keynote speeches of Congressman John B. Anderson of Illinois; Philip H. Abelson, Editor, Science; Paris, James Reddington, Chief Economist, International Energy Agency; and George J. Stathakis, Vice-President and General Manager, Nuclear Energy Program Division, General Electric Company; and Senator Kenneth V. Buzbee IERC Legislative Committee Chairman set the high standards of the conference.

The published report of the proceedings of the conference is available through the Illinois Energy Resources Commission.

H. ENERGY AWARENESS AT THE 1977 ILLINOIS STATE FAIR

The Illinois Energy Resources Commission sponsored a "bigger and better than ever" energy exhibit at the Illinois State Fair during 1977.

IERC displays at the Fairgrounds were of vital interest, illustrating pioneering into new energy survial ways for mankind. Nearly 8,000 square feet of exhibit area contained:

--models of two coal gasification plants from the Illinois Coal Gasification Group and Commonwealth Edison; (both major research and development projects scheduled for construction in Pekin and in southwest Perry County);

--a model of Illinois' first solar pioneer high school now under construction in St. Charles from the architectural firm of United Associates Ltd.;

--a solar grain drying exhibit from the University of Illinois;

--a solar collector made entirely from beer cans (emptied during construction, no doubt);

--a unique "hybrid" electric car, from the design department of Southern Illinois University, (also makes gas from garbage);

--a solar house model created by the Marshall Space Flight Center;

and, many additional displays from the Illinois State Geological Survey, the Federal Energy Research and Development Administration, and the National aeronautic Space Administration among others.

I. ENERGY PROGRAMS OF OTHER AGENCIES

One hundred state agencies are members of the Inter-Agency Task Force of the Illinois Energy Resources Commission.

The Task Force assists in coordination of the energy programs of its member agencies and provides a structure for the exchange of ideas and information between the agencies on their energy programs.

Here are examples of programs of the agencies, as reported to the IERC Inter-Agency Task Force:

DIVISION OF ENERGY
DEPARTMENT OF BUSINESS AND ECONOMIC DEVELOPMENT

The Policy Services Program--This program is responsible for implementation of the Illinois Energy Contingency plan. The types of energy emergencies addressed by the recently completed plan include prolonged and severe winters; labor disputes--such as the recent coal strike--effecting energy supply; and technical failures in energy supply equipment and embargo.

Energy Conservation Programs--These programs are the organizational unit within the Division charged with the primary responsibility for implementing the Illinois Energy Conservation Plan. The combined effect of this plan plus a supplemental plan will be a reduction of 7.21 percent of the projected energy consumption of Illinois in 1980.

The Illinois Coal Development Program--This program aims at expanding the use of Illinois coal in an environmentally acceptable manner. The program must respond to specific sectors of Illinois (e.g., industrial, utility residential and mining sectors) for the short term and the long term. Objectives outlined below are designed to respond to each sector.

1. Utility and/or Residential Sector

In this sector, the program is pursuing technologies geared for the long term, such as the gasification and liquefaction of coal, and magnetohydrodynamics (MHD). For the short or intermediate term, the program is interested in flue gas desulfurization systems and fluidized-bed combustion technology.

The program is also involved in the Commonwealth Edison Gasification Combined Cycle Test Facility (GCCTF) near Pekin, Illinois. This project will demonstrate low-BTU-coal-gasification and combined cycle electric power generation in a utility environment.

Illinois Coal Gasification Group (ICGG) project will produce pipeline quality synthetic natural gas and a gasoline grade synthetic crude oil at Perry County, Illinois. Currently, the ICGG and ERDA (DOE), are engaged in Phase I (Design) activity.

Another potential State involvement is in a Coal Liquid Refinery Facility (CLRF) proposed for Wood River, Illinois. This proposal, if selected by ERDA (DOE),will process coal-derived synthetic crudes to gasoline and #2 furnace oil.

2. Industrial Sector

In this sector, emphasis is on the industrial user of natural gas or oil to switch back to Illinois coal. Technologies and concepts, such as atmospheric fluidized-bed boilers and low-BTU-coal gasification at an industrial park setting, are being pursued. Furthermore, there is a need for industry to learn of currently available coal technologies. This may be accomplished through conferences for the industrial sector.

The Combustion Engineering project will demonstrate the economic and technical feasibility of the atmospheric fluidized-bed combustion boiler for the industrial sector at the Great Lakes Naval Station.

3. Mining Sector

Also of importance is the removal of gob piles from abandoned mines. The process involves the separation of coal from other matter in the gob piles. The coal is then sold to consumers and the resulting material may be utilized as land fill. Thus, marketable coal could be sold and the gob piles reduced.

Alternative Energy Program--This program has projects in the following areas: Energy Recovery from Waste Oil; Energy Recovery of Industrial Waste Liquids and Sludges; Energy Recovery from Municipal Waste-to-Energy and Resource Recovery Systems; Biomass Energy Production; Waste Heat Recovery; Development of Alternative Energy Demonstration Projects; and, Solar Programs.

The Fuel Management Program--This program conducts ongoing inhouse research studies, gathers and collects such essential data deemed necessary to maintain a constant awareness and provide an assessment of the energy supply picture for all types of energy both nationally and statewide; and acts as the primary informational respondent for the Emergency Energy Contingency Plan.

The energy Hot Line is an integral part of the Fuel Management Program. The Hot Line operation is a State telephone service designed to receive calls regarding energy problems anywhere in the State from any person or business with energy related problems. The Hot Line number is a toll call number which operates during normal business hours except during critical energy supply periods when the line is operational on a 24 hour, 7 day per week basis through the assistance of the ESDA.

Source of Division of Energy Funds:

	FY 78 Appropriation	FY 79 Proposed
GRF	$569,800	0
Public Utility Fund	0	$629,600
Federal Energy Funds	$2,909,400	$3,502,700
Coal Development Bond Funds	$10,000,000	$14,000,000

DEPARTMENT OF PUBLIC HEALTH

The Division of Nuclear Safety is responsible for the inspection and monitoring of the operation of nuclear power stations and related nuclear fuel cycle facilitites to ensure that the operation of these facilities has no deleterious effect on the health and safety of citizens of the State of Illinois.

Source of Funds:

In FY '78, $160,300 was allocated to this function. The budget request for FY '79 is $213,300.

The Department's program on building codes for mobile and modular housing includes adoption by the Department of the ASHRAE 90-75 energy standard for heating, air-conditioning and ventilation applicable to all modular homes sold within Illinois.

DEPARTMENT OF MINES AND MINERALS

Activities:

1. Safety regulation of coal mining
2. Training of coal miners
3. Operation of mine rescue stations
4. Regulation and permitting of drilling activity (oil, gas and coal)
5. Regulation of surface mined land reclamation

All activities are carried out under state laws and rules promulgated by the Mining Board or Oil and Gas Board. The Administration will propose that the Department of Mines and Minerals be lead agency for state activities under federal surface mine laws in fiscal year 1979.

Source of Funds:

Activity	Appropriation FY 78 (Fund)	Proposed FY 79 (Fund)
Safety regulation, training and rescue stations	$978,500 $200,000	$1,332,600
Oil, gas and coal drilling	$500,000	$546,200
Land reclamation	$238,000	$265,500*

*No amounts are shown here for the federal strip mine program because of uncertainty at the federal level. Some resources will be spent by the Department and some "passed-through" to the Department of Agriculture and Conservation and the Environmental Protection Agency.

Changes from FY 78:

The major change is the federal strip mine program. State assumption of regulatory responsibility is necessary to limit dual regulation and to make sure the strict federal standards are enforced in the best interest of Illinois.

GOVERNOR'S OFFICE OF MANPOWER AND HUMAN DEVELOPMENT

Activities:

1. Consumer Services. Aids consumers in electric utility case intervention before the Illinois Commerce Commission.

2. Weatherization. Aids low income households to weatherize through Community Action agencies and community-based organizations.

3. Crisis Intervention. Aids low income households in meeting the increased burden of utility and fuel bills.

4. Solar Energy Demonstration. Demonstration of low technology solar panels to heat low income households.

5. Skill Training Improvement. Training underemployed and economically disadvantaged individuals in balance of State regions in mine safety and skills.

Source of Funds:

All funding for these activities is from federal grants. For this reason, FY '79 figures are current estimates of available funds only.

Activity	FY 78 Approps.	FY 79 Estimate
Consumer Services	$301,000	$538,500
Weatherization	1,897,900	4,179,500
Crisis Intervention	34,756,000	17,602,000
Skill Training	1,700,000	1,700,000

Changes from FY '78

Since the FY '78 appropriation for crisis intervention included two winters, the FY '79 request will be at about half that level.

ILLINOIS COMMERCE COMMISSION

The regulation of energy and other utility rates is currently the most visible Commerce Commission activity. The Commission now has before it about 600 million dollars in requested rate relief impacting nearly all the citizens and commercial and industrial businesses within Illinois. In addition to this is an estimated 750 million dollars in gas and electric automatic adjustment clauses. Obviously, with the magnitude of dollars and implicit issues in question, the Commission has a profound effect not only on the individual utility consumer but also on the overall economic vitality of the State--a vitality which influences Illinois' tax base and employment level.

The purpose of gas and electric utilities, and of state utility regulation as well, is to provide adequate and safe service at the lowest possible rate, commensurate with paying a fair wage to utility workers and a fair rate of return on investment. To accomplish this purpose, and to protect the

economic health of its citizenry and industrial firms and to minimize the impact of the changing energy climate, the Commission has been responding and is increasing its capability to respond to the ever changing energy situation. A few of the Commission's responses are briefly expressed below.

* Requested and received a sizeable FY '78 budget increase in the Commission's Accounting and Gas and Electric Engineering Sections for rate case activity and utility service analysis.

* Established a Policy Analysis and Research Division to conduct independent energy research, planning and policy alternatives.

* Requested legislation to remove a 5.5 million dollar biennial spending limitation on public utility regulation (Public Act 80-641).

* Flattened gas and electric rate structures designed to promote conservation and reward low consumption.

* Issued a regulation concerning the non-essential uses of natural gas (General Order 202).

* Authorized various utilities' home insulation programs.

CAPITOL DEVELOPMENT BOARD

1. Implementation of ASHRAE 90-75
   ASHRAE 90-75 is the newest and most widely accepted energy conservation construction standard available today. CDB staff has conducted an evaluation of the standard and is now preparing to present the Board with a resolution making ASHRAE 90-75 mandatory on all new CDB construction.

2. Energy Audits of State Facilities
   CDB has established an Energy Management Unit to carry out Plan 16 of the State Energy Conservation Plan (ECPA and EPCA). The unit will conduct energy audits of nearly 12 million gross square feet of state facilities (all buildings in excess of 50,000 GSF are included.) The 1978 budget for the unit is $201,000.

3. Solar Energy Initiatives
   CDB is currently managing the construction of a public school in St. Charles, Illinois. The school will utilize solar energy for hot water and space heating. This project is the beneficiary of a marching grant awarded in 1977 by ERDA under the National Program for Solar Heating and Cooling of Buildings.

   In January of this year, CDB submitted an application to the Department of Energy for a matching grant under the current round of solar demonstration grants. The application requests a 50% match for the installation of solar equipment in the Department of Agriculture Lab and Office Building to be built at the State Fairgrounds just outside of Springfield.

Total project cost is estimated at $1.1 million.

4. Coal-Water-Oil Emulsion Demonstration Project
CDB has collaborated with the Adelphi University Center for Energy Studies in New York and the Coal Extraction and Utilization Research Center at Southern Illinois University to plan a full scale demonstration in an operating boiler at Menard Penitentiary of the technical and economical feasibility of a coal-water-oil emulsion fuel.

The process was developed in laboratory tests conducted at Adelphi. The emulsion consists of 50% coal, 35% oil, and 15% water. Laboratory tests of emulsions containing high sulfur coal demonstrated sulfur removal in excess of 95% with the use of soda ash additives. The Capitol Development Board, in cooperation with Adelphi and Southern Illinois University, has presented an unsolicited proposal for funding of the demonstration project to the Department of Energy and the Environmental Protection Agency.

5. Life Cycle Cost Analysis
The Capital Development Board Act of July 10, 1972, was amended by the Comprehensive Solar Energy Act, Senate Bill 944, to require the preparation of life cycle cost estimates of proposed energy systems for all facilities to be errected for state agencies. This amendment is currently being implemented and will become a standard requirement in future project development.

ENERGY ACTIVITIES OF OTHER AGENCIES

The Institute of Environmental Quality, among its projects, has recently finished a flue gas desulfurization program wherein it was able to successfully remove sulfur dioxide from the flue gas resulting from burning six and one-half percent sulfur coal. The process uses considerably less energy than the conventional scrubber and does not produce the huge quantities of sludge materials that conventional sludge devices usually do. Also, the Institute has been able to recycle the waste products from the process and convert them into valuable fertilizer. This work has been done on laboratory and pilot scale. The next step would be a demonstration project--estimated cost, $10 million.

The Department of Public Aid is accepting nearly one-fourth of all applications in its local offices for the Special Crisis Intervention Program. Under the program, arrangements are made toward payment of back utility bills, based on the money actually available to the client.

The Department of Aging--working with the Division of Energy of the Department of Business and Economic Development--has developed plans for assistance to the elderly with residential heating problems due to a coal shortage, and helped carry out the plans during the coal strike.

The State Treasurer's Office takes into consideration for its Community Services Allocation the amount of loans that banks have committed for anit-pollution devices. This factor is used to help determine the amount of money banks will receive in the Treasurer's bidding program. The Treasurer's office this year will work in cooperation with any bank in its Specific Opportunity Bid program in which a bank would use the state funds specifically for energy resource or anti-pollution loans.

The Department of Agriculture has begun a farm energy conservation educational program. The Department also during the year was a leader in Illinois in gaining interest throughout the state in possibilities of "Gasohol".

The Illinois Environmental Protection Agency has been studying in detail the air pollution problems in six areas of the State for the past two years--Chicago, Peoria, St. Louis, Decatur, Rock Island, and Massac County. Those areas have been identified as not meeting ambient air quality standards for one or more pollutants. The EPA expects to see the results of those studies in 1978. A result is to be regulatory changes as they affect existing power plants, primarily for particulate emissions. This is in contrast to the historical problem with coal-fired power plants relating to sulfur dioxide. It now looks as if the Illinois EPA's future control efforts will relate more to particulate emissions than to sulfur dioxide emissions.

The Emergency Services and Disaster Agency maintains a 24 hour "hot line" to receive direct calls from citizens experiencing a shortage of fuel. Through cooperative efforts of State government, the problem of locating scarce fuel and transporting and supplying it to the individual home owner is accomplished. The service was maintained during shortages taking place during the last two severe winters, the winter of '77-78 being augmented in its effect by the coal strike.

The Department of Local Government Affairs has begun an energy management assistance project for local governments in Illinois. The program is funded under the Federal Energy Policy and Conservation Act(EPCA) and the Federal Energy Conservation and Production Act. As one of the program measures in the State Plan prepared pursuant to these Acts, the efforts of the Department of Local Government Affairs are subject to the general supervision of the Division of Energy. The program includes a broad informational and organizing program to be conducted among local governments; local energy management advisory services; state liaison and coordination; and local energy conservation demonstrations.

Other State Agencies report the practice of energy conservation within their buildings. These include: Illinois State University, the Military and Naval Department, The Board of Regents, State Board of Elections, Sangamon State University, the Department of Mental Health, the Illinois Commission on Atomic Energy, the Illinois State Historical Library, and the Medical Center Commission. Various conservation measures practiced by the agencies include setting the thermostat at 68 degrees during the winter and 78 during the summer; turning off lights and equipment when not in use; closing drapes for outside windows when leaving the office; replacement of incandescent lighting with fluroescent fixtures when new fixtures are needed; reduction of light levels in parking lots during late night hours; reduction of heating levels in garages and dock areas, lobbies, vestibules and stairways; increased maintenance of outside doors, windows, closures and weather stripping; turning off hot water unless absolutely required; all personnel charged with responsibility of turning off unneeded electric lights and appliances; employees encouraged to use car pools or public transportation; and, addition of insulation to buildings.

J. COAL DEVELOPMENT PROJECTS

The Illinois Energy Resources Commission is mandated by the General Assembly to evaluate and approve or reject coal development projects requesting state funds through the $65,000,000 provided under the Coal Development Bond Act.

The two coal development projects which have been approved by the Commission are shown in the following Fact Summaries:

***

FACT SUMMARY

PROJECT: Powerton Gasification Combined Cycle Test Facility

CATEGORY: Low-Btu coal gasification for electric power generation

PROPOSED SITE: Pekin, Illinois Powerton Station

MEMBERS INCLUDE:
1. Commonwealth Edison
2. EPRI
3. State of Illinois
4. Department of Energy

TOTAL COST: $167M

Cost Breakdown:

Commonwealth Edison	$ 14.2M
State of Illinois	7.2M
EPRI	30. M
U.S. Dept. of Energy (DOE)	115.6M
TOTAL	$167.0M

SCHEDULE:

Phase I: Design Portion: In Progress
Construction and Start-up: Begin February, 1979, finish April, 1980

Phase II: (Test Program) May, 1980, to May, 1983

INPUTS & OUTPUTS:

Inputs: 200,000 to 300,000 tons of coal during 3-year test period. Each Lurgi gasifier has capacity of 600 tons/day.

Outputs: The Powerton facility will generate 25 Mw of electric power with a maximum capacity of 32-35 Mw (if a steam generator were to be used).

OTHER: If initial test facility is successful, it may expand to generate 170 Mw of electric power which would require annually up to 500,000 tons of Illinois coal.

RECOMMENDATION: Illinois has committed $7.2M in Coal Development Bond Funds to this project.

STATUS: An Intergovernmental Agreement between the State of Illinois and United States of America was formally signed at the Governor's Office on August 12, 1977. A Participation Agreement among C-E, EPRI, and the DOE has been signed. The Definitive Contract between Department of Energy and Commonwealth Research Corporation has also been signed.

The design portion of Phase I is progressing according to schedule. However, the actual start of construction will be delayed until February of 1979, due to two major problem areas. One problem is that the U.S. Region V EPA is requiring the proposed Powerton facility to comply with the Prevention of Significant Deterioration Program Review prior to the start of construction. This program review will take a minimum of 4 to 6 months to complete. The other problem concerns acquiring sufficient U.S. funding through FY '79.

*AN INTERGOVERNMENTAL AGREEMENT BETWEEN THE STATE OF ILLINOIS AND UNITED STATES OF AMERICA WAS FORMALLY SIGNED AT THE GOVERNOR'S OFFICE ON AUGUST 12, 1977. THE START OF CONSTRUCTION IS ANTICIPATED TO BE DELAYED TILL MARCH OF 1979.

***

FACT SUMMARY

PROJECT: Combustion Engineering (C-E) Fluidized-Bed Boiler Project

CATEGORY: Category I, Industrial Steam Generators

PROPOSED SITE: Great Lakes Naval Station

MEMBERS INCLUDE:
1. C-E
2. U.S. Navy at Great Lakes
3. Department of Energy
4. State of Illinois

TOTAL COST: $8.316

Cost Breakdown:

C-E	$1.061M
U.S. Navy at Great Lakes	.637M
Department of Energy	5.868M
State of Illinois	.750M
TOTAL	$8.316M

SCHEDULE:

Phase I (Development): 1 3/4 years, completed April, 1978

Phase II (Construction, Testing - Demonstration Unit):
April, 1978, to April, 1980

INPUTS & OUTPUTS:

Inputs: Coal 5,000 tons/test period
Limestone 2,500 tons/test period

Outputs: Up to 50,000 #/hr. steam at 350 psig

OTHER: FBC will be at atmospheric pressure, and employ natural circulation cooling. The Navy will operate this plant for at least a period of 2½ years following the test program. During this period, the Navy will use 15,000 tons/year of Illinois coal. There is a possiblity that the Navy will add 2 base units to meet their future requirements - 30,000 tons/year of coal.

RECOMMENDATION: $750,000 of Coal Development Bond Funds has been committed to this project.

STATUS: Contract negotiations between the State of Illinois and C-E are nearing completion. The contract between ERDA and C-E has been signed. An inter-agency agreement between ERDA and the Navy has also been signed. Phase II activity has commenced.

*THE ILLINOIS ERC APPROVED THE RECOMMENDATION OF THE DIVISION OF ENERGY FOR FUNDING OF $750,000 ON JULY 25. C-E IS PROCEEDING WITH PHASE I ACTIVITY. PHASE II IS ANTICIPATED TO COMMENCE IN APRIL, 1978.

THREE PROBABLE REQUESTS FOR COAL DEVELOPMENT FUNDS

Anticipated requests to the Illinois Energy Resources Commission during FY'79 for state funding under the Coal Development Bond Act include the following three major projects:

***

FACT SUMMARY

PROJECT: Allis-Chalmers Kilngas Coal Gasification Process

CATEGORY: Synthetic Fuel Gas for electric utility power generating plants and industrial process heating.

PROPOSED SITE: Illinois or Ohio site

PROPOSED MEMBERS:
1. Allis-Chalmers, Mil., Wisc.
2. Consumers Power Co., Jackson, Mich.
3. CIPS, Springfield, IL
4. Illinois Power Co., Decatur, IL
5. Iowa Power & Light Co., DesMoines, Iowa
6. Monongahela Power Co., Fairmont, W.Va.
7. Ohio Edison Co., Akron, Ohio
8. The Potomac Edison Co., Hagerstown, Md.
9. Public Service Co. of Indiana, Plainfield, Ind.
10. Public Service Co. of Oklahoma, Tulsa, Oklahoma
11. Union Electric Co., St. Louis, MO
12. West Penn. Power Co., Greensburg, Penn.

TOTAL COST: $75 - 100M

SCHEDULE:

Engineering: Complete Mid-1979

Construction of Commercial Plant: Mid-1979 - 4th Quarter of 1981

Operation: Begin 4th Quarter of 1981

INPUTS AND OUTPUTS:

Inputs: 650 TPD

Outputs: Synthetic low BTU Fuel Gas to generate 40 Mw of electric power

OTHER: The proposed commercial plant will have an immediate scale-up potential to process 6000 TPD of coal producing enough synthetic gas to generate 500 Mw of electric power. The fuel gas may also be used in industry and employ the co-generation concept.

RECOMMENDATIONS: It is anticipated the Division of Energy will develop a financial recommendation for this project during the second or third quarter of calendar year 1978.

STATUS: A contract between Allis-Chalmers and the eleven utilities for engineering pilot plant testing and site evaluation is in place. It is anticipated this phase of the project will be completed in Mid-1979. Two sites are currently being reviewed: (1) the Wood River plant site of the Illinois Power Company and (2) the Ohio site, the West Lorain plant site of the Ohio Edison Company. It is anticipated the site selection (Illinois or Ohio) will occur in the third quarter of calendar year 1978.

The Division of Energy is currently reviewing the Allis-Chalmers/Illinois Power Proposal requesting $33 million in Coal Development funds to assist in contributions of the "Kilngas" facility.

*ENGINEERING, PILOT PLANT TESTING AND SITE EVALUATION IS IN PROGRESS. IT IS ANTICIPATED THE SITE SELECTION (ILLINOIS OR OHIO) WILL OCCUR IN JULY OF 1978.

***

FACT SUMMARY

PROJECT: Illinois Coal Gasification Group (ICGG)

CATEGORY: High BTU Coal Gasification Demo Plant

PROPOSED SITE: Perry County, Illinois

PROPOSED MEMBERS:
1. Northern Illinois Gas Co.
   (Mid-Continent Gasification Company)
2. The Peoples Gas Light & Coke Co.
   (Peoples Gas Light Coal Gasification Co., Inc.)
3. Central Illinois Public Service Co.
   (CIPS ENERGY, Inc.)
4. Central Illinois Light Co., Inc.
   (CILCO Energy Corporation)
5. North Shore Gas Co.
   (North Shore Coal Gasification Co., Inc.)

TOTAL COST: $334 M (Current Dollars)

Cost Breakdown:

ICGG	$156 M
ERDA	$178 M
TOTAL	$334 M

SCHEDULE:

Phase I (Design): 21 months (June, 1977 thru September 1979)

Phase II (Construction): 34 months (December, 1979 thru September, 1982)

Phase III (Operation): 42 months (October, 1982 thru April, 1986)

INPUTS & OUTPUTS:

Inputs: Coal 2,200 TPD
Water 2M GPD

Outputs: Pipeline Gas: 18M CF/D
Syncrude (gasoline grade): 2,400 BBL/day

OTHER: Future commercial plant would require up to 30,000 tpd of coal and 26 M GPD of water to produce 250 M CF/D of pipeline gas and 33,000 BBL/day of synthetic crude oil.

RECOMMENDATION: The evaluation and subsequent financial recommendation by the Division of Energy will occur sometime after the January, 1979 milestone; Decision by the U.S. Department of Energy (DOE) to proceed with the second part of Phase I activity.

STATUS: Contract between the ICGG and DOE for this project was signed on June 7, 1977. The ICGG is competing against another group of utilities having an Ohio site. The DOE will only award 1 of the 2 proposals for construction. It is anticipated this major DOE decision will occur in the first quarter of calendar year 1979. Phase I activity is currently in progress, but its scheduled completion date has been moved back by 6 months. The time table stated above takes this delay into account. The delay is due in part to a DOE order to slow down the detailed design work for the demonstration plant. This pilot plant recently concluded a successful 100 hour continuous run, using in part Illinois coal.
It is estimated that this project would provide 1,900 construction jobs and 415 operating jobs for the demonstration plant; and 3,000 to 3,600 construction and 1,075 operating jobs for each commercial plant.

*CONTRACT BETWEEN ICGG AND DEPARTMENT OF ENERGY WAS SIGNED ON JUNE 7, 1977. PHASE I ACTIVITY IS CURRENTLY IN PROGRESS.

***

FACT SUMMARY

PROJECT: AMOCO Oil Coal Liquids Refinery Facility (CLRF)-PON FE-8

CATEGORY: Petroleum Refining Facility for Liquids Derived from Coal Liquefaction

PROPOSED SITE: Wood River, Illinois

PROPOSED MEMBERS:
1. AMOCO Oil
2. State of Illinois
3. Non-funding Supporters
   a. Fluor Engineers and Constructors, Inc.
   b. Southwest Research Institute
   c. Batelle Columbus Laboratories

TOTAL COST: $61.2 M (1977 $, including escalation)

Cost Breakdown:

1.	AMOCO	$ 1.4 M
2.	State of Illinois	3.0 M
3.	U.S. Dept. of Energy (DOE)	56.8 M
	TOTAL	$61.2 M

SCHEDULE:
Phase I (Process Selection) July, 1978 - September, 1979
Phase II (Design and Construction) October, 1979 - September, 1981
Phase III (Operation) October, 1981 - April, 1984

INPUTS & OUTPUTS:

Inputs: Coal Liquids 25,000 BBL/Yr.

Outputs: 15-20,000 BBL/Yr. Gasoline & Heating Oil

OTHER: After the project is completed, AMOCO will allow DOE (and other governmental groups) and industry to utilize the facility for an additional period of time.

RECOMMENDATION: The Division of Energy recommends that $3 M be the State's share in this proposal.

STATUS: The CLRF proposal was submitted to the Department of Energy on July 1, 1977. The DOE is reviewing this submission with two others that were also submitted. DOE anticipates awarding the project in the second quarter of calendar year 1978. Letters of support from Senator Stevenson and from Representative Lucco and Senator Nimrod have been sent to the DOE.

*DOE ANTICIPATES AWARDING THE PROJECT IN THE SECOND QUARTER OF CALENDAR YEAR 1978.

VII. FY '79

The Illinois Energy Resources Commission has been responsible for the review of $615.750 million in coal gasification projects that were submitted by the Illinois Department of Business and Economic Development, Division of Energy, under the Coal Development Bond Act. Based on preliminary project evaluations being conducted by the Department of Business and Economic Development's Division of Energy it is anticipated that in FY '79 an increased number of such projects will come before the Commission for review. In addition to the growth at the state level, an increase of $39 million, to $608 million, is expected at the federal level.

In order to be prepared for the evaluation of the increased number of projects, a long range energy plan must be developed. In the past, much of the legislation concerning energy has been piecemeal and devoted to emergency situations only. The energy plan needs to include goals of the state's comprehensive plan, specific FY '79 goals, and long term goals.

The Illinois Energy Resources Commission has made a start toward the fulfillment of the goals. The research of the analysis groups suggests that we will have to rely upon the following for the short term:

1. Greater use of coal
2. Greater use of nuclear energy for electrical generation
3. Extensive conservation of all energy sources.

The development of renewable resources is emphasized for long term goals. Through the recommendations of the study panel groups and projects of future needs, different possibilities can be considered and ultimately recommended to the policy makers as potential courses of action for the State.

These study panels as part of the energy plan play a key role. The original energy study panels were operational in 1976 and 1977. They have implemented many new ideas, while at the same time combined conventional ideas. The study panels will need to be ready to investigate and report occuring changes in the energy picture.

Two concepts, although different, that are important to the energy plan are:

a) the coordination of energy activities and grants on an intergovernmental basis, and

b) the need to increase public awareness about energy.

A new aspect of a good energy plan is the fact that it will provide for all state energy-related programs to be conducted in a coordinated fashion. State, local, and regional governments will be alerted to the availability of much needed cost sharing opportunities.

Also, an informed public is another key factor in the energy plan. Energy updates, through the use of speech texts and audio-visual programs; energy news, through releases to the press; a Speaker Bureau, through the use of public meetings; such as "Outlook Meetings", and the State Fair, through the use of displays revealing efficient use and reduced waste of all types of energy are techniques that inform the public and give them an awareness to the problem.

Through the implementation of an energy plan that possesses the components listed here, a successful solution to the energy problem can be found.

ACKNOWLEDGMENTS

... Appreciation is expressed to the EPRI JOURNAL of the Electric Power Research Institute, Inc., for permission to reproduce the art work used for the cover of this annual report.

... Special thanks to Marvin Nodiff, Director, Division of Energy, Department of Business and Economic Development, for the descriptions in this report of Coal Development Projects.

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Illinois Energy Resources Commission

DEPOSITORY
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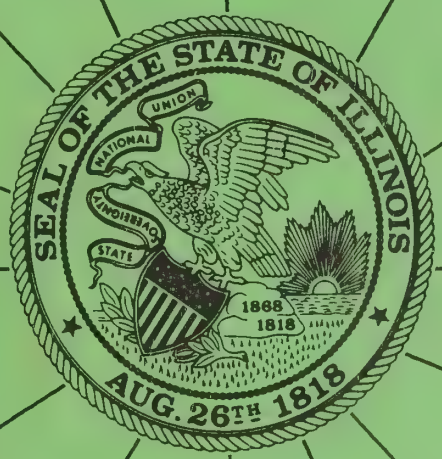
STATE OF ILLINOIS



1977 ANNUAL REPORT TO THE GENERAL ASSEMBLY

1977 ANNUAL REPORT

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Representative Adeline J. Geo-Karis, Vice Chairman
James P. Hartnett, Ph.D., Secretary

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Illinois Energy Resources Commission

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March 15, 1977

To The Members of The General Assembly

Dear Members:

Enclosed is the third annual report of the Illinois Energy Resources Commission, submitted in accordance with Public Act #78-1125. This document reflects the activities, accomplishments, and recommendations of the Commission during the period of March 15, 1976 through March 14, 1977.

The Commission continues to believe that attention must be focused not only on the rapid development of new resources of energy, but also on the efficient use and conservation of existing supplies. To this end, the Illinois Energy Resources Commission has approved the funding, upon construction, of $32.2 million for two coal development projects from the $70 million bond money established for this purpose. The cost of these two projects is currently estimated at $607 million, with Coalcon estimated at $440 and the Powerton Project at $167 million. An additional large project, the Illinois Coal Gasification Group, is anticipated to be reviewed in FY 78 with its current cost estimated at $334 million.

In other areas, the Commission completed an extensive review of energy activities within the state and has proposed legislation to reorganize the various state agencies involved in energy, in an attempt to coordinate energy activities and avoid duplicatory efforts. A more extensive Commission effort involved the activities of the Commission's 6 energy study panels who have met for over a year to develop recommendations concerning what the state should be doing to meet its future energy needs. Copies of these study panel reports are expected to be available in early July of this year. In addition, the study panel recommendations were the primary basis for 35 energy bills which the Commission developed and submitted for consideration in the General Assembly this year.

Looking to next year, the Commission will be progressing into Phase II of its activities. These activities involve a continued effort in pursuing reorganization proposals, renewed legislative development of the study panel recommendations, the formulation of a plan to achieve an energy policy for the state, along with the continued review of coal development projects. In keeping with its mandate, the Commission recognizes the complexity of the equally compelling social, economic and environmental considerations and intends to proceed in a manner compatible with accomplishing a timely solution to the future energy needs of the State of Illinois.

Sincerely,

Senator John L. Knuppel, Chairman

Representative Adeline J. Geo-Karis
Vice Chairman

James P. Hartnett, Ph.D.
Secretary

ENERGY RESOURCES COMMISSION
PUBLIC ACT 78-1125
HOUSE BILL 2651

An Act creating the Illinois Energy Resources Commission and defining its powers and duties.

Be it enacted by the People of the State of Illinois, represented in the General Assembly:

Section 1. (S.H.A. ch. 93, Sec. 301)

There is created the Illinois Energy Resources Commission, hereinafter in this Act called the Commission.

The Commission shall consist of 3 members of the House of Representatives and two public members all appointed by the Speaker of the House; 2 members of the House of Representatives and 2 public members all appointed by the Minority Leader of the House; 3 members of the Senate and two public members all appointed by the President of the Senate; 2 members of the Senate and 2 public members all appointed by the Minority Leader of the Senate.

The Commission shall select from its membership a Chairman who shall be a legislative member and any other officers it considers necessary. The Chairmanship of the Commission shall rotate biannually between the houses of the General Assembly in accordance with the appointment schedule set forth in Section 2 of this Act,[1] except that the member of the General Assembly elected to be the first Chairman of the Commission shall be eligible to succeed himself for a second, consecutive term as Chairman.

The Commission shall meet at the call of the Chairman after due and reasonable notice to all Commission members, except that a majority of the Commission members may convene a meeting of the Commission in the event the Chairman refuses to do so.

[1]Chapter 93, Sec. 302.

Sec. 2. (S.H.A. ch. 93, Sec. 302)

The initial membership shall be appointed within thirty days after the effective date of this Act, and serve until June 30, 1975. Thereafter, the membership shall be appointed during the month of June in each odd numbered year and shall serve terms of two years, beginning on July 1 of the year in which they were appointed, or until their respective successors are appointed. All appointments must be in writing and filed with the Secretary of State as a public record.

Vacancies in the membership of the Commission shall be filled in the same manner as the original appointments. Members of the Commission shall serve without compensation, but shall be reimbursed for actual expenses incurred in the performance of their duties.

Sec. 3. (S.H.A. ch. 93, Sec. 303)

The Commission shall:

(1) Study, review and make recommendations on the administrative structure the State should adopt for the efficient management of the State's effort in finding solutions to energy related problems;

(2) study, review and make recommendations to coordinate the proposed or ongoing programs of the various State agencies with reference to the solution of energy related problems;

(3) study and make recommendations concerning a long-range program relating to energy resources and related problems, including but not limited to conservation of energy, development of energy resources, environmental considerations and other related problems;

(4) seek the cooperation and assistance of energy producers, institutions of higher education, energy research institutions, and other public and private organizations and groups interested in finding solutions to energy related problems;

(5) promote the establishment by the federal government of a coal resource, research and development center and other federal energy projects in Illinois, and search for additional or other means of using Illinois coal to meet Illinois energy needs with due attention to environmental priorities;

(6) disseminate relevant information to the public for purposes of consumer education and protection.

Sec. 4. (S.H.A. ch. 93, Sec. 304)

All proposed projects under the program of capital development of coal resources funded through the sale of general obligation bonds created in "An Act to provide for the financing of a State program for research, development and demonstration in coal and energy; to authorize the issuance and sale of general obligation bonds of the State of Illinois; and to provide for the payment of the principal of and interest on such bonds," enacted by the 78th General Assembly, shall be submitted for review and by a majority vote approval or rejection by the Commission. The Commission shall review and by a majority vote approve or reject each such project and a dollar cost range. Such review and approval or rejection shall be made within 45 days of the receipt of each proposal by the Commission.

No expenditure of general obligation bond funds for the development of coal resources shall be made without the prior approval of the specific project by the Commission, except that a specific proposal shall be deemed to be approved if the Commission fails to act within the 45 day period.

Sec. 5. (S.H.A. ch. 93, Sec. 305)

The Commission may, with regard to the Personnel Code, employ or contract for the personnel and services necessary to develop the capability of analyzing and making recommendations to the Commission pursuant to the provisions of this Act.

Sec. 6. (S.H.A. ch. 93, Sec. 306)

In aid of the Commission's work, all departments, divisions, agencies and offices of the State shall afford to the Commission any requested resources, information, records, or advice pertinent to the subject matter under study.

Sec. 7. (S.H.A. ch. 93, Sec. 307)

In the performance of its duties, the Commission may accept grants or funds from the federal government, foundations, or other public or private organizations.

Sec. 8. (S.H.A. ch. 93, Sec. 308)

The Commission shall submit an annual report of its findings and recommendations to the General Assembly, no later than March 15 of each year.

Section 9. (S.H.A. ch. 93, Sec. 301 note) This Act shall take effect upon its becoming law.

Approved and effective Aug. 19, 1974.

COAL DEVELOPMENT BOND ACT
PUBLIC ACT 78-1122
SENATE BILL 1659

An Act to provide for the financing of a State program for research, development and demonstration in coal and energy; to authorize the issuance and sale of general obligation bonds of the State of Illinois; and to provide for the payment of the principal of and interest on such bonds.

Be it enacted by the People of the State of Illinois, represented in the General Assembly:

Section 1. (S.H.A. ch. 93, Sec. 401) Short title

This Act shall be known and may be cited as "The Illinois Coal Development Bond Act".

Sec. 2. (S.H.A. ch. 93, Sec. 402)

As used in this Act, "coal" or "coal resources" include coal, coal products or by-products, including electricity and synthetic gas. "Development of coal resources" includes research, development, and demonstration of improved methods of discovery, production, transportation, sale, distribution, conversion, end-use and waste disposal of coal resources.

Sec. 3. (S.H.A. ch. 93, Sec. 403)

The Department of Business and Economic Development shall have the following powers and duties:

a) To solicit, accept and expend gifts, grants or any form of assistance, from any source, including but not limited to, the federal government or any agency thereof;

b) To enter into contracts with business, industrial, university, governmental or other qualified individuals or organizations to promote development of coal resources. Such contracts may be for, but are not limited to, the following purposes: (1) the commercial application of existing technology for development of coal resources, (2) to initiate or complete development of new technology for development of coal resources, and (3) for planning, design, acquisition, development, construction, improvement and financing a site or sites and facilities for establishing plants, projects or demonstrations for development of coal resources; and

c) In exercise of the other powers grants to it under this Act, to acquire property, real, personal or mixed, including any rights therein such as mineral or water rights, by exercise of the power of condemnation in accordance with the procedures provided by "An Act to provide for the exercise of the right of eminent domain", approved April 10, 1872, as amended.[1]

[1]Chapter 47, Sec. 1 et seq.

Sec. 4. (S.H.A. ch. 93, Sec. 404)

The Council shall be composed of the Governor, the Lieutenant Governor, the Director of the Department of Business and Economic Development, the Chairman of the Capital Development Board, the Director of the Department of Mines and Minerals, the Secretary of the Department

of Transportation, the Chief of the Illinois Water Survey, the Chief of the Illinois Geological Survey, the Chairman of the Illinois Commerce Commission and the Director of the Environmental Protection Agency.

The Governor shall serve as chairman of the Council and the Lieutenant Governor as vice-chairman.

Sec. 5. (S.H.A. ch. 93, Sec. 405)

The Council shall convene at the call of the Chairman. It shall advise the Department of Business and Economic Development in relation to projects authorized under this Act and shall offer to the Department such recommendations as it deems appropriate for the development of the coal resources of Illinois. The Council may also assist the Department in securing matching funds for projects authorized under this Act.

Sec. 6. (S.H.A. ch. 93, Sec. 406)

The Department of Business and Economic Development is authorized to use $70,000,000 for the purposes specified in this Act. These funds shall be expended only on projects for which previous approval of the Illinois Energy Resources Commission has been granted.

Sec. 7. (S.H.A. ch. 93, Sec. 407) Bonds

The State of Illinois is authorized to issue, sell and provide for the retirement of general obligation bonds of the State of Illinois in the amount of $70,000,000 hereinafter called "Bonds", for the specific purposes of acquisition, development, construction, reconstruction, improvement, financing architectural and technical planning and installation of capital facilities consisting of buildings, structures, durable equipment, and land for the purpose of capital development of coal resources. The aggregate amount of bonds which may be authorized by this Act is $70,000,000.

Sec. 8. (S.H.A. ch. 93, Sec. 408) Sale of bonds

Sec. 9. (S.H.A. ch. 93, Sec. 409) Authentication of bonds

Sec. 10. (S.H.A. ch. 93, Sec. 410) Bond proceeds

Sec. 11. (S.H.A. ch. 93, Sec. 411) Expenditure of funds

Sec. 12. (S.H.A. ch. 93, Sec. 412) Investment of proceeds

Sec. 13. (S.H.A. ch. 92, Sec. 413) Repayments

Sec. 14. (S.H.A. ch. 93, Sec. 414) Bond repayment - General obligations

Sec. 15. (S.H.A. ch. 93, Sec. 415) Default

Sec. 16. (S.H.A. ch. 93, Sec. 416) Treasurer and comptroller

Sec. 17. (S.H.A. ch. 93, Sec. 417) Refunding bonds

Sec. 5. (S.H.A. ch. 127, Sec. 141)

Sec. 19. (S.H.A. ch. 93, Sec. 418) Severability

If any Section, sentence, or clause of this Act is for any reason held invalid or to be unconstitutional, such decision shall not affect the validity of the remaining portions of this Act.

Section 20. (S.H.A. ch. 93, Sec. 401, ch. 127, Sec. 141 notes.) This Act takes effect immediately upon its becoming law.

Approved and effective Aug. 19, 1974.

*Sec. 8 - 17 of Public Act 78-1122 describes the bonding authority and procedure of the coal development bonds.

IV. OBJECTIVES OF THE ILLINOIS ENERGY RESOURCES COMMISSION

The IERC established the following objectives for 1977:

1. Develop the guidelines for a "Policy on Energy Directions for Illinois", an energy policy statement to be presented to the Illinois General Assembly in 1978.

2. Develop and promote energy related legislation both on a State and federal level that supports the energy goals of Illinois.

3. Review the organizational structure of Illinois State government as it relates to energy in order to determine what, if any, restructuring of State agencies would delete unnecessary duplication and reduce overall costs.

4. Continue a program of inter-agency cooperation to foster a program of energy conservation among State facilities in line with the federal "Energy Policy and Conservation Act" by providing the forum for agency members to meet and discuss appropriate conservation techniques and development, through cooperation with colleges and universities of Illinois, of training programs and courses to deal with energy related problems.

5. Foster the development of the use of Illinois coal as an immediate (present to 1985) and near future (1985-2000) source of energy by reviewing and approving appropriate coal development projects as mandated under the "Coal Development Bond Act" and through development of original legislation.

6. Review environmental constraints which impact on Illinois energy policy formulation, for possible energy legislation which fosters the development of compatible environmental and energy usage policies in Illinois.

7. Develop procedures for the preparation of a state energy policy, along with related legislation, which utilizes the recommendations of the IERC energy study panels.

8. Continually review and assess all Commission objectives to encourage flexibility in the activities of the Commission.

V. ILLINOIS ENERGY RESOURCES COMMISSION FY '77 ACTIVITIES
(Partial List)

The IERC is participating or has participated in the following areas:

Committee Participation

- Senator Percy's Solar Energy Workshop Advisory Committee
- Representative Gale Schisler's Committee for School Building Conservation Measures
- Energy Policy and Conservation Act Executive Committee

Conferences

- Participant - Fourth Annual Energy Conference on Illinois Coal - UICC
- Co-sponsored "Energy Conservation: The Challenge to Local Government"

Information Dissemination

- Co-sponsored Illinois State Fair Energy Tent
- Prepared and distributed news releases
- WRKT (Waukegan) Solar Discussion
- State Capitol coal gasification display

Meetings

- Commission Meetings (approximately every two months)
- IERC Sub-Committee Meetings
- Coalcon project negotiations
- Powerton project negotiations
- Various fuel energy meetings during January-February

Projects

- Conservation of energy in buildings
- Co-sponsored Thermal Scanning
- Solar Energy -- State Agriculture Building

Proposal Preparations

- Coal/Water/Oil emulsion
- Solar Energy -- Oakton Community College
- Solar Energy -- St. Charles High School
- Solar Energy -- Solar grain drying
- Funding Proposals for Study Panels
- Remote Sensing Proposal for agricultural usage

Public Hearing

- Member steering committee on ERDA "Energy Plan" - Public Meeting
- Energy Policy and Conservation Act hearings throughout the State

Reports

- Solid Waste Disposal
- Preparation of the IERC Annual Report
- Report Projections of Energy Use Patterns prepared for the Commission by the UICC
- Illinois Energy Reorganization Options
- Illinois Energy Reorganization Proposal
- "Energy Report to the Illinois General Assembly"
- "Energy Press Summary"
- Report and Outline of One-Stop Siting Legislation, prepared by Commission member Tor Kolflat
- IERC Technical Committee Report: "Commonwealth Edison's Gasification Combined Cycle Test Facility"
- Energy Study Panel Reports: "Preliminary Executive Summaries"
- Proposed Energy Legislation for the 80th General Assembly

Reviews

- Coal Blending
- Pelletizing coal from mine slag wastes
- Clean emissions from smoke stacks
- EPCA Feasibility Study Report
- Energy-related legislation active in the General Assembly
- Stack Gas Particulate Removal
- Coalcon proposal
- Coal Gasification Group proposal
- Powerton proposal

Studies

- Study Panels

  -- Coal
  -- Energy Efficiency (Conservation)
  -- Electric Utilities (including nuclear)
  -- Natural Gas and Petroleum
  -- Solar (including wind power)
  -- Solid Waste and Biomass

  The above six study panels are composed of 120 volunteer members representing persons knowledgeable in energy from agriculture, government, industry, universities and the public sector who have been working for over a year in an effort to formulate a proposed State energy plan.

- Natural Gas Curtailment Studies
- Ohio River Basin Studies
- Energy Reorganization Study/Report

VI. COMMITTEES OF THE ILLINOIS ENERGY RESOURCES COMMISSION

Several Committees have been formed by the Energy Resources Commission to provide the Chairman with member input in various areas of study. Each Committee has established methodology to achieve goals set by the Commission. Following is a brief description of the responsibilities of each Committee, its Chairman and a listing of Committee members:

1) Executive Committee

Senator John L. Knuppel, Chairman

Representative Adeline J. Geo-Karis, Vice Chairman

Dr. James P. Hartnett, Secretary

composed of the officers, this Committee guides the activities and basic direction of the Commission with the consent of the membership as a whole.

2) Intergovernmental Committee

Representative Joe Lucco, Chairman

Dr. Boyd Keenan

Mr. Tor Kolflat

Mr. L. Chester May

Mr. Donald Schmitt

Mr. Eugene E. Voiland

This Committee has been working for over two years to study and develop a plan to reorganize State agencies involved in energy. The anticipated benefits from such a plan would accrue from eliminating duplicatory efforts among the over 16 agencies currently involved in various areas of energy, thereby reducing costs

and allowing for a combined coordination of the State's energy activities. This extensive effort is covered in more detail in a following section of this report.

3) Legislative Committee

Senator Kenneth Buzbee, Chairman

Representative Ralph Dunn

Representative Adeline J. Geo-Karis

Senator Gene Johns

Senator John L. Knuppel

Representative Joe Lucco

Senator Robert Mitchler

Senator John Nimrod

Representative Daniel Pierce

Representative Gale Schisler

Comprised of the legislative members, this Committee reviewed nearly fifth original energy bills and approved 40 (forty) for submission to the 80th General Assembly.

In addition, the Committee assesses other energy legislation active in the House and the Senate. Synopses of the legislation sponsored by the Commission is presented in a following section of this report.

4) Technical Committee

Senator John Nimrod, Chairman

Mr. Richard Gallagher

Representative Adeline J. Geo-Karis

Mr. John Gordon

Dr. James Hartnett

Senator John L. Knuppel

Mr. L. Chester May

Mr. Eugene Voiland

This Committee was established to investigate scientific and technical matters. Its responsibilities are to:

a) Evaluate and make recommendations to the Commission concerning the technical content of funding requests received by the Commission.

b) Assist other members of the Commission with technical information concerning funding requests when required.

c) Provide direction to the study panels in their efforts.

d) Seek the advice of Scientist and scientific groups in Illinois on energy funding projects and other energy related matters.

VII. ENERGY STUDY PANELS

In the latter part of 1975, the Commission initiated efforts to organize six study panels for the purpose of advising the Commission on the direction the State should be taking in energy.

Initially meeting in February of 1976, these study panels have recently completed a year-long study in six designated areas:

Coal

Electric Utilities (including Nuclear)

Energy Efficiency (Conservation)

Natural Gas and Petroleum

Solar

Solid Waste and Biomass

Composed of members knowledgeable in energy from Agriculture, Government, Industry, the Public Sector and Universities, the study panels were asked to develop recommendations for the near term (up to 1985) intermediate term (1985-2000), and the long term (beyond 2000). In addition, the panels were requested to:

(a) review information from the public hearings held by the IERC;

(b) ascertain and maintain the statistical data base necessary to prepare reports and to incorporate data into reports;

(c) identify ongoing programs and research and development activities within Illinois;

(d) take into account new technologies being developed at the international, national and State levels;

(e) identify special energy funding opportunities for Illinois;

(f) identify merits and potential obstructions and recommend procedures for overcoming them;

(g) recommend possible options to implement the proposed program, and

(h) identify important literature pertaining to subject matter of the study panel.

Currently, copies of the original "Executive Summaries" submitted by the panels are available upon request through the Commission office. The larger, comprehensive report, presently being composed into a uniform manner, is anticipated to be available in June of this year. The recommendations incorporated in these reports are the basis of proposed energy legislation listed in another section of this report.

VIII. PLANNED AND PROPOSED COAL DEVELOPMENT PROJECTS

--Coalcon Clean Boiler Fuels Project 17

--Commonwealth Edison Gasification Combined Cycle Test Facility 19

--Illinois Coal Gasification Group 21

--Combustion Engineering Fluidized Bed Project 22

--General Foods Fluidized Bed Combustion Process 23

--Coal-Water-Oil Emulsion Fuel System 24

PROJECT: COALCON CLEAN BOILER FUELS PROJECT.

CATEGORY: Low Sulfur Boiler Fuel Process Facility.

PROPOSED SITE: Near New Athens in Kaskaskia River Valley in St. Clair County.

Prime Member: Union Carbide Corporation

Other Consortium Members Include:

Atlantic-Richfield Company
DuPont de Nemours & Company
Electric Power Research Institute
Northern Natural Gas Company
Pacific Gas & Electric Company
Reynolds Metals Company
Celanese
Consolidated Gas Supply Company

TOTAL COSTS:

Total Costs (then year $) $440 M

Original Estimate (1974 basis)

	ERDA SHARE	CONSORTIUM SHARE	COMBINED SHARES
Phase I	4.8 M	-0-	4.8 M
Phase II	17.7 M	-0-	17.7 M
Phase III	71.15 M	71.15 M	142.3 M
Phase IV	36.25 M	36.25 M	72.5 M
TOTAL	$129.9 M	$107.3 M	$237.2 M

SCHEDULE:

Phase I (Preliminary Design): Finish June 15, 1977. The demonstration project will then be put in abeyance pending results from the test bed unit.

Construction of Demonstration Unit: 30 months

Operation of Demonstration Unit: 38 months

INPUTS & OUTPUTS:

Inputs:	3848 tons/day coal		
	2 mgd water		
Outputs:	Heavy fuel oil	2910	b/d
	Gasoline fraction	1232	b/d
	LPG	1.39	mcf/d
	Pipeline Gas	18.923	mcf/d
	Elemental sulfur	120	tons/d

STATUS: Phase I will be completed by June 15, 1977. The construction of this facility will be delayed by at least 3 years due to technical problems and economic uncertainties regarding the hydrocarbonization process. After the completion of Phase I, it is probable that a test bed unit will be constructed to help resolve these issues. It is unlikely that a contract will be signed for the test bed unit until the end of 1977. The construction and operation of the test bed unit will require 3 to 4 years. It will be at least five years before the demonstration unit is built. Upon construction, approximately 1,000 persons will be employed in building the plant, and 400 to operate it.

The State of Illinois has pledged $25 Million to Coalcon from its Coal Development Bonding Authority which was established in 1974. This money was authorized for plant construction only. Therefore, contract negotiations between Coalcon and the Division of Energy will be held in abeyance until the project re-evaluation has established a more clearly defined future for the Clean Boiler Fuels Program.

PROJECT: COMMONWEALTH EDISON GASIFICATION COMBINED CYCLE TEST FACILITY

CATEGORY: Low Btu Coal Gasification

PROPOSED SITE: Near Pekin, Illinois-Powerton Station

PROPOSED MEMBERS:
1. Commonwealth Edison
2. Electric Power and Research Institute (EPRI)
3. State of Illinois
4. Fluor Engineers & Constructors
5. Lurgi Mineralotechnik

ESTIMATED TOTAL COST: $167 M

Cost Breakdown:		
	Comm. Ed.	$ 14.2 M
	State	7.2 M
	EPRI	30. M
	ERDA	$115.6 M
	TOTAL	$167.0 M

SCHEDULE:

Prior to Contract (Preliminary Work): Completed May, 1977.

Phase I (Design, Procurement and Construction): Begin May, 1977
Finish May, 1979

Phase II (Test Program): Begin May, 1979
Finish May, 1982

Phase III (Conclusion):

INPUTS & OUTPUTS:

Inputs: 200,000 to 300,000 tons of Illinois coal during 3-year test period. Each Lurgi gasifier has capacity of 600 tons/day.

Outputs: The GCCTF will generate 25 Mw of electric power with a maximum capacity of 32-35 Mw (if a steam generator were to be used).

OTHER: ERDA has the option of utilizing this test facility for an additional 7 years after the initial 3-year test period. The project as originally planned, is estimated to employ 350 construction and technical workers and 150-200 permanent employees.

STATUS: The Division of Energy formally presented this project to the Commission for its approval on November 9, 1976, with the $7.2 M commitment being approved by the IERC on November 16, 1976. Payment is to commence upon project construction.

Contract negotiations are continuing between Commonwealth Research Corporation and ERDA. Based on these negotiations, a "Letter Contract" may be signed in the near future. An "Intergovernmental Agreement" between ERDA and the State of Illinois is expected to be signed at an appropriate time after the "Letter Contract" has been signed.

PROJECT: ILLINOIS COAL GASIFICATION GROUP (ICGG)

CATEGORY: High BTU Coal Gasification Demo Plant

PROPOSED SITE: Perry County, Illinois

PROPOSED MEMBERS:
1. Northern Illinois Gas Co.
   (Mid-Continent Gasification Company)
2. The Peoples Gas Light & Coke Co.
   (Peoples Gas Light Coal Gasification Co., Inc.)
3. Central Illinois Public Service Co.
   (CIPS ENERGY, Inc.)
4. Central Illinois Light Co., Inc.
   (CILCO Energy Corporation)
5. North Shore Gas Co.
   (North Shore Coal Gasification Co., Inc.)

TOTAL COST: $276 M (1975 dollars)

Cost Breakdown:

ICGG	$155 M
ERDA	$179 M
TOTAL	$334 M

SCHEDULE:

Phase I (Design): 20 months

Phase II (Construction): 34 months

Phase III (Operations): 42 months

INPUTS & OUTPUTS:

Inputs: Coal 2,000 TPD
Water 2 M GPD

Outputs: Pipeline Gas: 18 M CF/D
Syncrude (gasoline grade): 2,400 BBL/day

OTHER: Future commercial plant would require up to 30,000 TPD of coal and 26 M GPD of water to produce 250 M CF/D of pipeline gas and 33,000 BBL/day of synthetic crude oil. This project is estimated to provide 1,900 construction jobs and 415 operating jobs for the demonstration plant and 3,000 to 3,600 construction and 1,075 operating jobs for each commercial plant.

STATUS: Contract negotiations are underway for the design phase of this project which will cost $20 M and last 20 months. The contract is anticipated to be signed in the near future.

PROJECT: COMBUSTION ENGINEERING (C-E) FLUIDIZED BED PROJECT

CATEGORY: Category I. Industrial Steam Generators

PROPOSED SITE: Great Lakes Naval Station

PROPOSED MEMBERS: 1. Combustion Engineering (C-E)
2. U.S. Navy at Great Lakes

TOTAL COST: $8.184 M

Cost Breakdown:		
	C-E	$1.811 M
	U.S. Navy at Great Lakes	.637 M
	ERDA	5.868 M
	TOTAL	$8.184 M

SCHEDULE:

Phase I (Development): 1 3/4 years, completed May, 1978

Phase II: 2 years

Construction: May, 1978 to November, 1979
Test Program: June, 1979 to May, 1980

INPUTS & OUTPUTS:

Inputs:	Coal	5,000 tons/test period
	Limestone	2,500 tons/test period

Outputs: Up to 50,000 #/hr. steam at 350 psig

OTHER: FBC will be at atmospheric pressure, and employ natural circulation cooling. The Navy will operate this plant for at least a period of 2 1/2 years following the test program. During this time, the Navy will use 15,000 tons/year of Illinois coal. There is also a possibility that the Navy will add 2 base units to meet their future requirements -- 30,000 tons/year of coal.

STATUS: The contract between ERDA and C-E has been signed. An interagency agreement between ERDA and the Navy has also been signed. C-E has completed 9 months of Phase I activity. The Division of Energy will make a recommendation to the Commission regarding financial involvement for this project in the near future.

PROJECT: GENERAL FOODS FLUIDIZED-BED COMBUSTION PROCESS

CATEGORY: Category II, Industrial Boiler, ERDA Program Opportunity Notice (PON)

PROPOSED SITE: General Foods Corporation Manufacturing Plant, Kankakee, Illinois.

PROPOSED MEMBERS: General Foods Corporation
Erie City Energy Division of Zurn Industries
Burns & Roe Industrial Services Corporation

TOTAL COST: $12.7 M (1975 dollars)

Cost Breakdown

General Foods	$5.6 M	General Foods	$7 M
ERDA	$7.1 M	ERDA	$9 M
Total	$12.7 M	Total	$16 M

SCHEDULE: (Original)

Phase I: Completed August, 1977
Phase II: (Construction): September 1977 to November 1978 (14 months)
Phase III: (Demo): February 1979 to February 1982 (36 months)

INPUTS & OUTPUTS:

Inputs: Coal, 50,000 to 55,000 tons for three year test period

Outputs: Steam, up to 125,000 #/hr at 150 psig

OTHER: Demo plant is essentially a full-size commercial plant and will supply all the steam necessary for the Kankakee plant.

STATUS: The project appeared to be nearing fruition with only the details of the contract between ERDA and General Foods needing to be resolved. However, an eleventh hour re-evaluating of the project by General Foods resulted in their decision to withdraw from the project. General Foods belatedly realized that it was not necessary for them to develop an alternate fuel supply for their Kankakee plant in the near term.

Efforts are being made to find an industrial sponsor to replace General Foods. The Division of Energy had an arrangement with Peabody Coal and Arch Minerals whereby the coal companies would have provided the 55,000 tons of coal required for the project at virtually no cost to General Foods. The coal companies are still willing to follow through with this commitment.

It is too early to know if this project can be reassembled. However, it does not look very promising at this time.

COAL-WATER-OIL EMULSION FUEL SYSTEM FOR CLEAN BURNING OF HIGH-SULFUR COAL

The coal-water-oil emulsion is comprised of approximately 50% coal, 30% oil, and 20% water at the present time (the coal content of the final mixture could be higher). SO_2 emissions are reduced through the addition of a chemical to the mixture. This fuel is burnable with only minor boiler adaptation in coal-fired furnaces which have been converted to gas or oil.

The potential of the CWO emulsion as a technically and economically viable near term alternative fuel is based on two factors:

(1) the substantial reductions in sulfur dioxide levels achieved by combining powdered coal with oil and water in the form of emulsion and introducing an appropriate additive.

(2) the cost of using such a fuel, including production, transportation and equipment conversion, will be sufficiently low to make adaptation practical for public facilities, power generation plants and industries.

The full scale demonstration will be a joint effort of the Adelphi University Center for Energy Research, NASA, the Southern Illinois University Coal Extraction and Utilization Research Center and the Capital Development Board (CDB). The CDB will act as an overall project manager. The actual demonstration phase will be carried out at the Menard Correctional Center because of its close proximity to Southern Illinois University and to a number of operating mines. Menard has a spare functional boiler that has converted from coal to oil/gas fuel.

STATUS OF PROJECT:

March 15, 1977

Proposal has been completed and distributed by the Capital Development Board.

Proposal is scheduled to be discussed with ERDA and the project team in Washington on May 6, 1977 at 1:00 P.M.

PROJECT COST:

Total cost of the two-year project is estimated at $1.8 M.

The State of Illinois' share would be approximately $\cong$ $400,000.

IX. ILLINOIS ENERGY REORGANIZATIONAL PROPOSAL

Stated in the Commission's enabling legislation under Section 3, is: "(1) Study, review and make recommendations on the administrative structure the State should adopt for the efficient management of the State's effort in finding solutions to energy related problems;". In line with this mandate, the Commission's Intergovernmental Committee has developed an energy reorganization proposal for the State.

This proposal was formally developed in a report titled: Illinois Energy Reorganization Options and presented to the Commission by the Intergovernmental Committee in September of 1976. The report listed four suggested alternatives for the reorganization of segments of State agencies involved in energy. Upon receiving additional directions from the Commission, a follow-up report: Illinois Energy Reorganization Proposal was prepared in March of this year.

The latter report incorporates five legislative proposals which call for:

Bill #1 An Energy, Environment and Natural Resources Commission

Bill #2 A Department of Natural Resources

Bill #3 A Joint Committee on Energy, Environment and Natural Resources

Bill #4 A Task Force on the Creation and Development of the Department of Natural Resources

Bill #5 A Task Force Appropriation

A summary statement from the report and a synopsis of the five bills as shown in the Illinois Energy Reorganization Proposal is included in this section.

MAIN FEATURES

Several features make this proposal quite unique and innovative. Rather than dealing with only a very restricted policy area, or with the entire gamut of state activities, this proposal has focused on a complex of state policy areas which form a naturally interrelated whole--energy and environment policies. It has also viewed reorganization from a holistic perspective, not limiting its focus to the administrative, executive, or legislative arenas, but considering each of these areas as part of the whole process.

The proposal assumes the interrelationship of energy and environmental policies. In many ways these two policy areas are often opposed to each other, when they are conceptualized as energy development and environmental protection. The proposal reorganization combines these policy areas into one state agency so that the final policy of the agency must incorporate both energy and environmental concerns.

Another unique feature of this proposal is the emphasis on specific policy plan formulation. The proposal calls for the development of an annual energy, environment and natural resources policy plan. This will provide for specific articulation of state policies and policy criteria against which the operations of state programs can be evaluated. This formulation of policy development is a key feature of the proposal.

KEY ELEMENTS

There are four key structural elements in this reorganization proposal. They correspond to the structure of the bill in the rest of this report.

1. Energy, Environment and Natural Resources Commission (Reorganization Bill #1)

This unit is a public, regulatory-type commission with five members from specific backgrounds. The Commission will be the main policy form-

ulation unit. It will be responsible for developing the annual policy plan. The independence of this body is viewed as essential to provide the long-range perspective needed in the energy and environmental areas.

2. Department of Natural Resources (Reorganization Bill #2)

Rather than creating a new, separate agency for energy (one of the options considered by the Commission), this proposal calls for the consolidation of existing departments, departmental divisions, and agencies into one department. The main emphasis of this element of the proposal is coordination of activities and efficiency as well as policy coordination between energy and environmental concerns. The Commission's options report designates ten specific areas of overlapping jurisdiction and duplicate functions, which argues the need for coordination.

3. Joint Committee on Energy, Environment and Natural Resources (Reorganization Bill #3)

This committee is intended to structure the General Assembly's efforts in energy and environmental policy formulation. It consolidates the functions of several legislative commissions, including the Energy Resources Commission, into one unit. It also provides for involvement of the Committee in the annual policy plan and the evaluation of state programs.

4. Task Force on the Creation and Development of the Department of Natural Resources (Reorganization Bills #4 and #5)

This temporary task force of agency representatives is designed to study and work out the details of the transition involved in the creation of the Department of Natural Resources. An appropriation of $100,000 during the one-year life of the force is provided.

X. IERC APPROVED ENERGY LEGISLATION TO THE 80TH GENERAL ASSEMBLY

Acting upon the Study Panel recommendations and other input, approximately fifty (50) legislative proposals were developed for, and reviewed by, the Commission's Legislative Committee. Of these, nearly forty were approved for submission to the 80th General Assembly at the Commission's meeting in March.

As the "deadline" for introducing new legislation followed closely behind the Study Panel report submission date, inclusion of all recommendations in legislative form was not feasible this year. A renewed effort is expected in the next legislative session to develop additional energy related bills from recommendations derived from the Study Panel report. At present, the Commission is actively involved in the progress of the bills it approved for the current session.

For clarity and brevity purposes, the IERC approved energy bills have been separated according to House and Senate bills, with a brief summary of each bill following these listings. In addition, an asterisk denotes the fourteen bills which were endorsed by the Governor in his energy message this year.

ILLINOIS ENERGY RESOURCES COMMISSION

APPROVED LEGISLATION

INTRODUCED IN THE 80TH GENERAL ASSEMBLY

Legislative Listings

-- House Bills 30

-- Senate Bills 31

Synopses

1. Coal 32

2. Conservation 32

3. Electric Utilities 37

4. Petroleum and Natural Gas 38

5. Solar 38

6. Solid Waste 40

7. Reorganization 40

8. Budgetary 42

IERC - HOUSE BILLS

BILL #	SPONSOR	PARTIAL DESCRIPTION	COMMITTEE	SYNOPSIS
HB 1120	LUCCO	Creates Energy, Envir. & Nat. Res.	State Govt.	7.1
HB 1121	LUCCO	Energy, Envir. Res.-Joint Com.	State Govt.	7.3
HB 1122	LUCCO	Nat. Res. Dept. - Creates	State Govt.	7.2
HB 1123	LUCCO	Nat. Res. - Task Force	State Govt.	7.4
HB 1124	LUCCO	$100,000-Nat. Res.-Task Force	State Govt.	7.5
HB 1125	LUCCO	Nat. Res. Com.-Duties	State Govt.	7.6
HB 1279	GEO-KARIS	Coal Bonds-Energy Research	Envrmt.-Energy	5.6
HB 1454	GEO-KARIS	Energy Res. Com.-Rules	Envrmt.-Energy	1.1
* HB 1455	GEO-KARIS	School-Conserv.-Driv. Education	Envrmt.-Energy	2.10
* HB 1512	DUNN, RALPH	Recorders - Solar Easement	Cnty-Township	5.3
HB 1513	DUNN, RALPH	Pub. Com. College-Energy Education	Higher Ed.	2.13
HB 1514	DUNN, RALPH	Pub. Com. College-Energy Studies	Higher Ed.	2.12
HB 1521	LUCCO	Energy Res.-Fed. Progrs.	Envrmt.-Energy	5.2
* HB 1560	PIERCE	Home Insulation Assistance	Pub. Utilities	2.1
HB 1597	GEO-KARIS	$147,100-Energy Res. Comm.	Approp. II	8.1
* HB 1748	SCHISLER	Revenue-Solar, Water Heating	Revenue	5.1
HB 1749	SCHISLER	Higher Ed.-Energy Planning	Higher Ed.	2.15
HB 2036	DUNN, RALPH	Education-Energy Programs	Higher Ed.	2.16
* HB 2187	GEO-KARIS	Civil Admin.-DOT County Aid	Transportation	2.7
* HB 2238	GEO-KARIS	Admin. Cde-Car Pools	Transportation	2.6

*Refers to IERC legislation endorsed by Governor Thompson in his Energy Message of April 6, 1977.

IERC - SENATE BILLS

	BILL #	SPONSOR	PARTIAL DESCRIPTION	COMMITTEE	SYNOPSIS
*	SB 0563	MITCHLER	Civil Admin-Energy Resources	Agric.	4.1
*	SB 0564	MITCHLER	Commerce Comm-Load Management	Agric.	3.1
*	SB 0738	KNUPPEL	Schools-Energy Topic Instruction	Elem. & Scnd. Ed.	2.11
	SB 0739	KNUPPEL	University-Energy Education	Higher Ed.	2.9
*	SB 0740	KNUPPEL	Vehicle Code-Commuter Vans	Trans.	2.21
	SB 0833	BUZBEE	CDB-Energy Studies	Agric.	2.4
*	SB 0834	BUZBEE	State Agencies-Energy Consumption	Agric.	2.3
	SB 0835	BUZBEE	CDB-Energy Conservation	Agric.	2.5
*	SB 0836	BUZBEE	State Agencies-Conserve Paper	Agric.	2.18 & 6.1
	SB 0837	BUZBEE	CDB-Energy Conservation	Agric.	2.2
	SB 0888	BUZBEE	$-Energy Resources Comm-OCE	Approp. II	8.2
	SB 0889	BUZBEE	School Cde-Solar Energy	Elem. & Scnd. Ed.	5.4
	SB 0890	BUZBEE	Higher Ed.-Solar Energy	Higher Ed.	5.5
*	SB 0893	NIMROD	School Cde-"Energy Week"	Elem. & Scnd. Ed.	2.14
	SB 0917	MITCHLER	Public Util.-Commerce Com. Expen.	Agric.	3.2
	SB 0918	KNUPPEL	Schools-Instruct Energy Topics	Elem. & Scnd. Ed.	2.8
	SB 0944	NIMROD	Comprehensive Solar Energy Act	Agric.	5.7
	SB 1045	BUZBEE	School Cde-Emergency Closing	Elem. & Scnd. Ed.	2.17
	SB 1127	BUZBEE	ICC-Intermittent Gas Device	Agric.	2.19
	SB 1328	NIMROD	Energy Conservation Act	Agric.	2.20

*Refers to IERC legislation endorsed by Governor Thompson in his Energy Message of April 6, 1977.

COAL

1.1 SYNOPSIS: HB 1454 - GEO-KARIS

Amends the Illinois Energy Resources Commission Act. Changes the period for review of capital development of coal resources projects from 45 days to 90 days from the time of receipt of each proposal. Further states that no expenditure of bond funds for coal development projects shall be made without prior approval of the specific project by the Commission, except that a specific proposal shall be deemed to be approved if the Commission fails to act within a 90-day period, and not a 45-day period. Also allows the Commision to develop rules and regulations governing proposal submission necessary for Commission evaluation.

CONSERVATION

2.1 SYNOPSIS: HB 1560 - PIERCE

Home Insulation and Financing Act. Authorizes the Illinois Commerce Commission to allow electrical or gas corporations to institute home insulation and finance programs to provide assistance to residential customers as an incentive to conserve energy. Further authorizes the Commission to adopt regulations necessary to implement the provisions of this Act.

2.2 SYNOPSIS: SB 0837 - BUZBEE

Amends section of Capital Development Board Act to include energy conservation construction standards. Authorizes the board to adopt an energy conservation code that will minimize energy use in the construction, operation or modification of buildings. Permits the utilization of adopted energy code

to state buildings under CDB jurisdiction. Establishes periodical studies to determine the effectiveness of application of the code to operational building efficiency.

2.3 SYNOPSIS: SB 0834 - BUZBEE

Life Cycle Costing Act. Encourages state agencies to analyze the cost of energy consumption of each facility to be planned and constructed or renovated. Provides a life cycle cost analysis to include the cost of the facility, the cost of energy consumed, and the cost of operation and maintenance related to energy, over the economic lifespan of the facility. Exempts certain historic buildings from lifecycle cost analysis.

2.4 SYNOPSIS: SB 0833 - BUZBEE

An Act relating to public buildings. Provides that a feasibility study of the energy source for heating and cooling must be made before any contract is executed for the construction or major alteration of a state building.

2.5 SYNOPSIS: SB 0835 - BUZBEE

An Act creating an Energy Advisory Conservation Council. Creates a seven-member Energy Advisory Conservation Council with the Capital Development Board to propose rules to provide maximum energy conservation in design, construction, and repair of buildings. Authorizes CDB to develop and adopt state building standards. Directs the Council to review all regulations relating to energy adopted for inclusion in state building codes. Authorizes appropriate powers for the Council to carry out these duties. Allows Council to apply for moneys from any source and to contract with any public agency for performance of services of the exchange of employees or services by one agency to the other to carry out purposes of this Act.

2.6 SYNOPSIS: HB 2238 - GEO-KARIS

An Act amending the powers of the Department of Transportation. Authorizes the Department of Transportation to establish, monitor and coordinate a car pool program for public and private sectors of metropolitan areas with funds made available for such purpose from any source. Establishes that the Department may include, but is not limited to, computer or manual matching systems, car pool promotion efforts, and preferential treatment on highways.

2.7 SYNOPSIS: HB 2187 - GEO-KARIS

Adds section to the Department of Transportation Act requiring the Department to provide assistance in planning, traffic flow, light synchronization, and car pooling upon request from city and county governments and agencies within the state.

2.8 SYNOPSIS: SB 0918 - KNUPPEL

Amends School Code. Provides each public school to offer instruction on energy topics in addition to health, economics, humanities, and sciences.

2.9 SYNOPSIS: SB 0739 - KNUPPEL

Amends School Code. Requires all state universities to have a course in methods of energy education. No elementary education major may graduate without it. State Board of Education to provide for or approve energy education curriculum in public elementary and secondary schools.

2.10 SYNOPSIS: HB 1455 - GEO-KARIS

Amends School Code. Provides that "energy conservation" methods shall be included in driver education courses; defines this term.

2.11 SYNOPSIS - SB 0738 - KNUPPEL

Amends Illinois Educational Development Board Act. Includes energy conservation programs in technical assistance items offered to schools. Makes other nonsubstantive changes.

2.12 SYNOPSIS: HB 1514 -DUNN, RALPH

Amends Public Community College Act. Includes in powers and duties of Community College Board the duty to provide energy studies in curriculum of local community colleges.

2.13 SYNOPSIS: HB 1513 - DUNN, RALPH

Amends Public Community College Act. Provides that all community colleges must include specified energy education programs in curriculum offered.

2.14 SYNOPSIS: SB 0893 - NIMROD

Amends School Code. Provides for "Energy Week", to be proclaimed by the Governor annually, to be observed in the schools.

2.15 SYNOPSIS: HB 1749 - SCHISLER

Adds Section to Board of Higher Education Act. Provides that Board shall establish a comprehensive energy plan and submit appropriate legislative proposals by March 1, 1978. Board to conduct annual review of plan.

2.16 SYNOPSIS: HB 2036 - DUNN, RALPH

Amends the Board of Higher Education Act. Provides that higher education institutions must include specified energy education programs in curriculum offered.

2.17 SYNOPSIS: SB 1045 - BUZBEE

Amends the School Code. Provides that in the event of an Executive Order declaring a state of emergency due to an energy shortage, the Superintendent of Public Instruction has the authority to determine the closing of public schools within the state.

2.18 SYNOPSIS: SB 0836 - BUZBEE

An Act in relation to recycling of materials. Authorizes the Department of General Services to prescribe standards and specifications for paper products used by state agencies, to promote conservation of paper, to require that the highest percentage possible of total paper purchased be recycled, and to establish procedures for separation of solid waste generated by state agencies that is recyclable. Provides that the Governor may exempt any single activity or facility of a state agency from compliance with this Act for periods not to exceed one year.

2.19 SYNOPSIS: SB 1127 - BUZBEE

An Act to conserve natural gas by regulating the use of standing pilot light equipment. Directs the Illinois Commerce Commission to certify intermittent ignition devices for installation or use in gas appliances no later than 120 days after request for certification by manufacturer or on its own initiative. Within 25 months following the first certification by the

Commission of an intermittent ignition device, it shall be unlawful for any person or firm to sell, or offer for sale, any pilot ignition device manufactured in this state which does not meet such certification.

2.20 SYNOPSIS: SB 1328 - NIMROD

Enacts the Energy Conservation Act. Establishes state and local programs to minimize energy use. The Department of Business and Economic Development shall adopt Codes relating to thermal and lighting efficiency standards based upon federal standards. Municipalities which have building codes shall adopt such Codes; under certain conditions such requirements may be waived. The Department of General Services shall adopt procedures to purchase products promoting energy efficiency. Effective immediately.

2.21 SYNOPSIS: SB 0740 - KNUPPEL

An Act relating to vanpooling. Amends the Illinois Vehicle Code to include commuter vanpooling. Defines the term commuter vanpool and directs the Secretary of State to issue distinctive registration plates for second division vehicles used as commuter vans.

ELECTRIC UTILITIES

3.1 SYNOPSIS: SB 0564 - MITCHLER

Amends the Act concerning public utilities. Requires the Illinois Commerce Commission to develop and implement studies for load management and conservation. Requires the Commission to make forecasts of demand on energy for public utilities at the service territory and state levels, and to make recommendations for rate restructuring.

3.2 SYNOPSIS: SB 0917 - MITCHLER

Removes budget ceiling on the Illinois Commerce Commission in order to allow for funding of energy mandated legislation. Budget would still be authorized by the Bureau of Budget, then by the legislature.

PETROLEUM AND NATURAL GAS

4.1 SYNOPSIS: SB 0563 - MITCHLER

Authorizes the Department of Business and Economic Development, to collect data and make projections concerning the supply and demand of petroleum, coal and LP energy sources in the state. Further, authorizes BED to prepare emergency energy contingency plans to be considered by the Illinois Energy Resources Commission.

SOLAR

5.1 SYNOPSIS: HB 1748 - SCHISLER

Amends the solar energy heating and cooling Act. Provides for the addition of water heating systems and grain drying systems to the provisions of the Act.

5.2 SYNOPSIS: HB 1521 - LUCCO

An Act pertaining to solar rights. Gives authority to the Illinois Energy Resources Commission to study the legal aspects of solar rights and to hold public hearings on property owner rights incident to solar energy.

5.3 SYNOPSIS: HB 1512 - DUNN, RALPH

Creates an Act relating to solar easements. Provides that any easements obtained for the purpose of exposure of a solar energy device shall be created in writing and shall be subject to the same conveyancing and instrument recording requirements as other easements. Defines terms and conditions of the Act.

5.4 SYNOPSIS: SB 0889 - BUZBEE

Amends School Code. Provides that State Board of Education shall, in consultation with the Capital Development Board, develop a plan for utilizing solar energy in public schools. Effective October 1, 1977 or upon becoming law, whichever is later.

5.5 SYNOPSIS: SB 0890 - BUZBEE

Amends Board of Higher Education Act. Provides Board of Higher Education shall, in consultation with Capital Development Board, develop a plan utilizing solar energy in public universities and colleges. Effective October 1, 1977, or upon becoming a law, whichever is later.

5.6 SYNOPSIS: HB 1279 - GEO-KARIS

Provides for the redistribution of $5,000,000 from the Coal Development Bond Act for research and development of other forms of energy excluding nuclear. Effective immediately.

5.7 SYNOPSIS: SB 0944 - NIMROD

Creates The Comprehensive Solar Energy Act of 1977. Provides for the definition of solar energy systems, establishes demonstrations of solar energy system feasibility, establishes incentives for construction of solar

energy systems, establishes and coordinates educational programs on solar energy systems, establishes studies of relations between solar energy systems and conventional energy systems, delegates primary authority to state agency for informational, technical, and development activities regarding solar energy systems and programs, specifies the source of funds therefor, and amends certain Acts in connection therewith. Effective immediately.

SOLID WASTE

6.1 SYNOPSIS: SB 0836 - BUZBEE

Creates an Act in relation to the conservation of paper. Applies to all branches and segments of State government; special provisions for units of local government.

REORGANIZATION

7.1 SYNOPSIS: HB 1120 - LUCCO

Creates the Energy, Environment and Natural Resources Commission consisting of 5 full time members appointed by the Governor subject to confirmation by the Senate. Members receive an annual salary of $35,000. The Commission is responsible for developing an Energy, Environment and Natural Resources Policy Plan each year. The Commission also assumes the duties of the Pollution Control Board as successor to that agency. Effective July 1, 1978 or when it becomes law, whichever is later.

7.2 SYNOPSIS: HB 1122 - LUCCO

Adds, amends and repeals certain paragraphs in "The Civil Administrative Code of Illinois". Creates a Department of Natural Resources. Transfers the powers and duties of the Department of Conservation and Mines and Minerals to the Department of Natural Resources. Transfers the powers and duties of the Department of Transportation pertaining to waterways to the Department of Natural Resources. Transfers the powers and duties of the Department of Public Health pertaining to nuclear safety to the Department of Natural Resources. The Department of Natural Resources also assumes the powers and duties presently exercised by the Environmental Protection Agency, the Illinois Institute of Environmental Quality, the powers and duties of the Department of Business and Economic Development under the Illinois Coal Development Bond Act and the powers and duties of the Department of Registration pertaining to Natural History, Water and Geology. Effective July 1, 1978 or when it becomes law, whichever is later.

7.3 SYNOPSIS: HB 1121 - (Ch. 19, rep. pars. 145.41 through 145.46; Ch. 93, rep. pars. 301 through 308; Ch. 127, rep. pars. 541 through 543) - LUCCO

Creates the Joint Committee on Energy Environment and Natural Resources, a joint legislative committee consisting of 16 members. The Committee is empowered to make recommendations to the Senate regarding confirmations of gubernatorial appointments of the Director of Natural Resources and the Energy, Environment and Natural Resources Commission. The Committee must also review and approve the annual Energy, Environment and Natural Resources Plan and it assumes the powers and duties of the Water Resources Commission, the Illinois Energy Resources Commission and the Illinois Commission on Atomic Energy.

The Acts creating those 3 commissions are repealed. Effective July 1, 1978 or upon becoming law, whichever is later.

7.4 SYNOPSIS: HB 1123 - LUCCO

Creates the Task Force on the Creation and Development of the Department of Natural Resources. The Task Force consists of 11 members appointed by various agency and department directors. The Task Force is required to report to the General Assembly and the Governor, in writing, on recommended action for the creation and implementation of the Department of Natural Resources. Effective July 1, 1977. Repealed June 30, 1978.

7.5 SYNOPSIS: HB 1124 - LUCCO

Appropriates $100,000 to the Task Force on the Creation and Development of the Department of Natural Resources which is to exist from July 1, 1977 to June 30, 1978 and is required to make recommendations to the General Assembly and the Governor concerning Creation and implementation of the Department of Natural Resources.

7.6 SYNOPSIS: HB 1125 - LUCCO

Amends numerous acts throughout the Laws of Illinois to reflect the creation of the Department of Natural Resources and the Energy, Environment and Natural Resources Commission which assume the duties of various departments, the Institute of Environmental Quality, the Environmental Protection Agency and the Pollution Control Board.

BUDGETARY

8.1 SYNOPSIS: HB 1597 - GEO-KARIS

Appropriates $147,100 for the ordinary and contingent expenses of the Illinois Energy Resources Commission for the fiscal year beginning July 1, 1977.

8.2 SYNOPSIS: SB 0888 - BUZBEE

Makes appropriation of $152,164 for the ordinary and contingent expenses of the Illinois Energy Resources Commission.

XI. ACKNOWLEDGEMENT

The members of the Illinois Energy Resources Commission would sincerely like to thank each of the individuals and organizations who have furnished the Commission with materials and information for this report.

In addition, a special note of appreciation is given to Mr. Don Handy, IERC Staff Director, and the Commission Staff for preparing this publication.

The completeness of this report has only been made possible through their kind cooperation and assistance.

ILLINOIS ENERGY RESOURCES COMMISSION
713 STATE OFFICE BUILDING
SPRINGFIELD, ILLINOIS 62706

TO: _____

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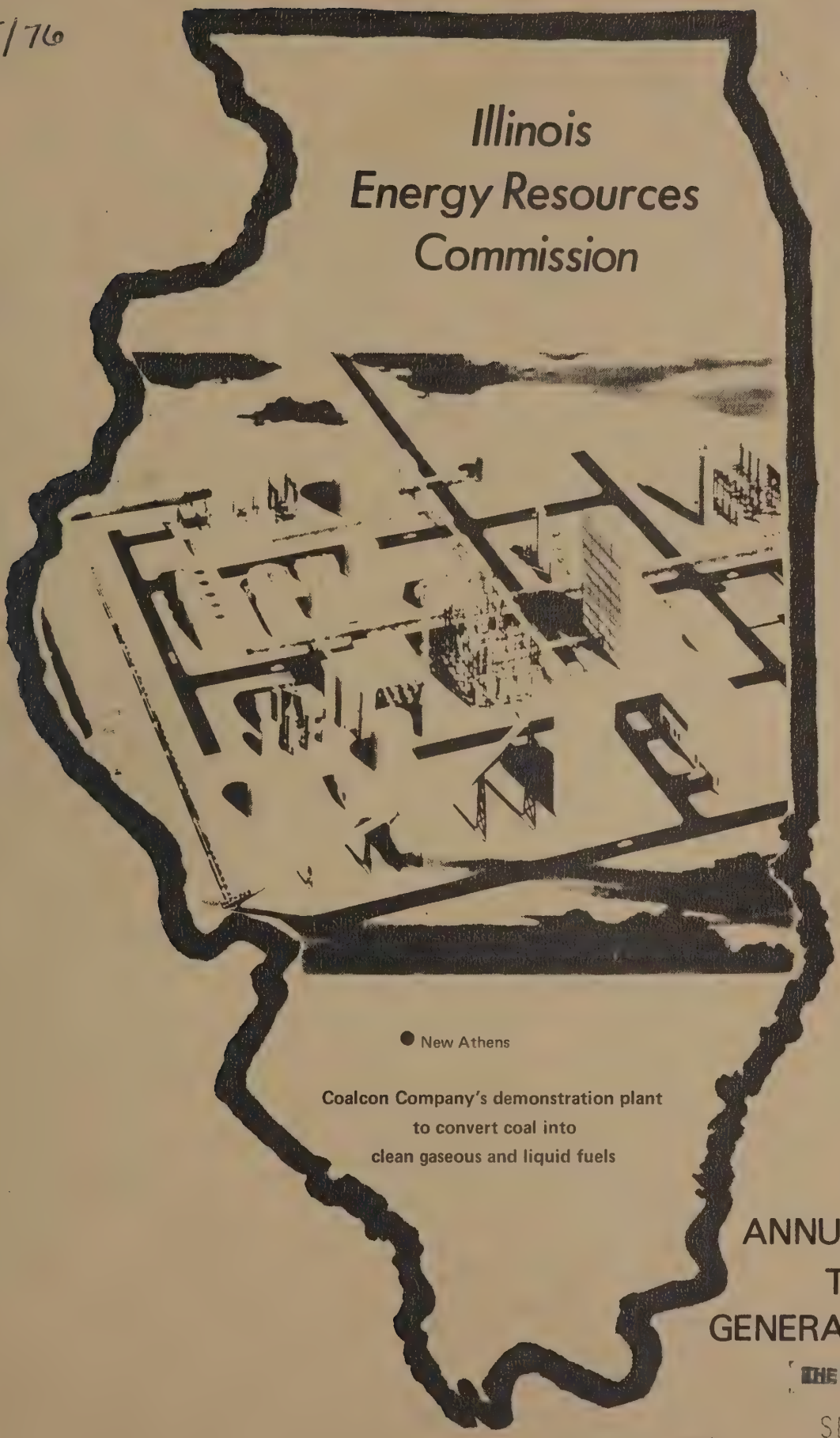
Illinois Energy Resources Commission



● New Athens

Coalcon Company's demonstration plant
to convert coal into
clean gaseous and liquid fuels

1976 ANNUAL REPORT TO THE GENERAL ASSEMBLY

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Illinois Energy Resources Commission
STATE OFFICE BUILDING
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PHONE (217) 782-8220

March 15, 1976

To the Members of the General Assembly

Dear Members:

Enclosed is the second annual report of the Illinois Energy Resources Commission, submitted in accordance with Public Act #78-1125. This document reflects the activities, accomplishments, and recommendations of the Commission during the period of March 7, 1975 through March 6, 1976.

The Commission believes that attention must be focused not only on the rapid development of new resources of energy, but also on the allocation and conservation of existing supplies. Although new technology must be secured, its implication must be strongly and judiciously weighed against a broad range of competing and equally compelling social, economic and environmental values. The Commission recognizes the complexity of the problem and intends to proceed in a manner compatible with accomplishing a timely solution without forfeiting its validity or completeness.

The Commission, having completed public hearings and fundamental review of energy activities, will continue into the next year with a program of legislative action and governmental review. In addition, a major emphasis and area of endeavor will be the development, by the Commission's energy panels, of an extensive and comprehensive energy report reflecting the Commission's recommendations on an Energy Policy for Illinois. A target date of January 1, 1977 has been established for this report.

Sincerely,

John L. Knuppel
Senator John L. Knuppel, Chairman

Adeline J. Geo-Karis
Representative Adeline J. Geo-Karis
Vice Chairman

J. P. Hartnett
James P. Hartnett, Ph.D.
Secretary

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"Finding an acceptable and economical way of utilizing Illinois coal is by far our greatest challenge and providing a government structure that will work toward that end."

CHAIRMAN

JOHN LINEBAUGH KNUPPEL (Senator, 48th District) (Democrat) was born August 8, 1923, Mason County, Illinois. Educated in Easton Public Schools; Millikin University; Marquette University, Ph.D. Degree, 1947; University of Illinois Law School, LL.B. Degree, 1949. Overseas Marine veteran of World War II. Practicing trial attorney for the past 27 years, a senior partner in firm of Knuppel, Grosboll, Becker & Tice, with offices in Petersburg, Havana, Mason City, Beardstown and Virginia. Member of Lutheran Church; Kiwanis; Jaycees; Amvets, American Legion; Veterans Foreign Wars; American, Illinois, Mason and Menard County Bar Associations; Assistant Attorney General for 8 years; first Director of Attorney General's Consumer Protection Bureau for Downstate Illinois; former chairman, Senate Agriculture, Conservation and Energy Resources; Minority Spokesman, 1973-74. Member: Executive, Revenue, Judiciary, Constitutional Implementation, Transportation & Public Utilities, Labor & Commerce, and Elections Committees; Sub-Committees: Land Reclamation; Federal Laws on Campaign Disclosure; Economic Interest; member of Agriculture Commodity Marketing Study; Higher Education; Election Laws; Livestock Commissioners Advisory Board; Transportation and Public Utilities; Peoria State Hospital Land Use Study; Illinois-Mississippi Canal and Lake, and presently chairman of State's Attorney Study, and chairman of Illinois Energy Resources Commission . Married to Verdell Berndt; three children, Holly Barnes, Cyndy Flock and John A. C. Knuppel. Address: Virginia.

"All segments of State government should work together and cooperate to produce a meaningful State energy program for the State of Illinois, no matter which segment initiates it, if the taxpayers of Illinois are to benefit from it."

VICE CHAIRMAN

ADELINE JAY GEO-KARIS (Representative, 31st District) (Republican) was born in Tegeas, Greece. Education: Herzl College; Northwestern University; Mt. Holyoke College, DePaul University, LL.B. Degree. Taught Spanish at University of Illinois and Naval Law at Smith College. Founder, Geo-Karis, Thompson and Clausen, Ltd. Law Firm, Zion. Licensed to practice in State and Federal Courts and in Washington, D.C. Former municipal and legislative attorney for two villages, one township and one school district. First woman elected Justice of the Peace in Lake County and first woman appointed Assistant State's Attorney in Lake County. Member: Board of Governors, Lake County Bar Association; Board of Directors, Easter Seal Society of Lake County and Lakeview Girl Scout Council; American Business Women's Association; League of Women Voters; Altrusa; O.E.S. Millburn 570; Zion Historical Society; Past President, St. Demetrios Church Board and Past President of 13th Congressional District Republican Women's Club; Past National President, Daughters of Penelope. Recipient: Americanism Medal, North Shore Chapter, D.A.R.; named Woman of the Year, Daughters of Penelope; and Outstanding Legislator Award by the Illinois Federation of Independent Colleges and Universities in 1975. Minority Spokesman, Labor and Commerce Committee; Secretary, Rape Study Committee; Human Resources; and Public Utilities Committees. Secretary, Joint House-Senate Committee Investigating Unemployment Compensation Office; Vice Chairman, Sub-committee Child Welfare Services; first Chairman, Illinois Energy Resources Commission, 1975; elected Vice Chairman for 1975-76; is dedicated to the development of all energy resources of the State of Illinois in an economically and environmentally feasible manner.

"The national energy crisis has not gone away. The development of the coal resources of Illinois along with a comprehensive state program for the efficient use of our current energy resources could make a major contribution to this long range solution of this national problem."

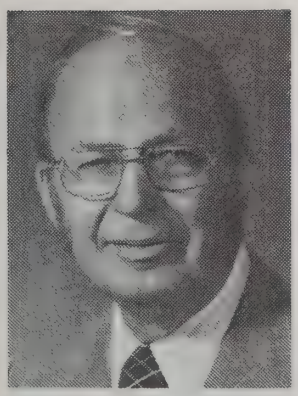
SECRETARY

JAMES P. HARTNETT (Public Member) was born March 19, 1924, Lynn, Massachusetts. Educated in Mechanical Engineering, Illinois Institute of Technology, B.S. Degree; Massachusetts Institute of Technology, M.S. Degree; University of California (Berkeley), Ph.D. Degree. Member of the American Society of Mechanical Engineers; American Society of Aeronautics and Stronautics; American Association of University Professors and American Institute of Chemical Engineers. Recent lectures on energy include trips to Yugoslavia, Poland, Mexico, India and Israel. Editor and co-editor of numerous book and journal articles relating to energy. Presently Director, Energy Resources Center, University of Illinois, Chicago, Illinois; Secretary, Illinois Energy Resources Commission.

"We must utilize our universities for research and development of our energy resources."

KENNETH V. BUZBEE (Senator, 58th District) (Democrat) was born November 30, 1937, in Anna, Illinois. Educated in Anna schools and Southern Illinois University, graduate work in Government. Served three years in United States Marine Corps, now a Major in Marine Corps Reserve. Worked for three years as a radio announcer and newscaster in Southern Illinois. Member: First United Methodist Church; Lions Club; Southern Illinois Life Underwriters Association. Elected to the Illinois State Senate in November, 1973, serving at the present time. Committees: Agriculture, Conservation and Energy; Pension, Personnel, and Veterans Affairs; Education. Subcomittee, Pensions and Personnel. Commissions: Commission on the Organization of the General Assembly; State Property Insurance Commission; International Trade and Port Promotion; Advisory Council; OSPI Commission on Educational Television; Water Resources and Water Pollution; Illinois Energy Resources Commission. Married Betty Hiller, six year old son, Brent, and two year old daughter, Kendra Victoria. Address: R. R. 1, Makanda.

"Coal is King. Let's mine it - not tomorrow but today."



RALPH DUNN (Representative, 58th District) (Republican) was born February 28, 1914, in Pinckneyville, Illinois. Graduated from Pinckneyville Community High School. President, Perry County Fair Association for nine years. State president, United Cerebral Palsy of Illinois, 1961-64. Member: Board of Directors, Southern Illinois, Inc.; First Baptist Church, DuQuoin; Lions Club; Perry County Shrine Club; Sixth Illinois Constitutional Convention, 1969-70. Delegate to Republican National Convention, 1968. Chairman, Illinois Energy Resources Commission Energy Center Committee. Associated with brothers in business enterprises since 1939. Married Ellen Fones, has four children. Address: Post Office Box 107, DuQuoin.

"The significant task that is before the Commission is to find an answer to Illinois' energy needs that is environmentally acceptable and economically viable."

RICHARD C. GALLAGHER (Public Member) was born May 3, 1941, New York City, New York. Education: Received B.S. Degree from the United States Military Academy - West Point; completed ten years of active duty in the United States Army; earned Bronze Star for Valor; Purple Heart; Combat Infantryman's Badge and several commendation medals. M.P.A. Degree, Princeton University, Woodrow Wilson School of Public and International Affairs; M.B.A. Degree, Farleigh Dickinson University. Organized, developed and edited four volumes of Readings in National Security. Presently, Assistant Vice President, The First National Bank of Chicago; member of Illinois Energy Resources Commission. He and his wife, Joan, have two children, Barbara and Laura. Address: 106 South Kenilworth, Mt. Prospect.

"I'm concerned about the rigid sulfur dioxide standards and other standards that are making it impossible for this nation to become energy self-efficient."

JOHN LUTZ GORDON (Public Member) was born October 10, 1899, Lincoln, Illinois. Education: B.S. Degree, Milwaukee School Engineering 1920; E.E., 1953. Consultant Engineer, Vaughan & Meyer, Milwaukee 1920-23; engineer, C. A. Shaler Co., Waupun, Wisconsin 1923-26; with Central Illinois Electric and Gas Co. Rockford 1926 - successfully vice president and division manager Lincoln Division; vice president Rockford division 1934-60; chairman of the board and chief executive officer, 1963-71; 1971 to date Consultant, Commonwealth Edison Company. Director Alpine State Bank, Rockford; Trustee Lincoln College; Rockford College; Rockford Memorial Hospital; Board, Regents Milwaukee School of Engineering; Mason (Shriner); Rotarian. Clubs: Rockford Mid-Day; Rockford Country Club; University Club of Rockford; Union League, Chicago. Member of Illinois Energy Resources Commission. Married Ruth Coddington, one daughter, Marian (McCann). Address: 2613 Elder Lane, Rockford.

"Energy in Illinois means coal. We have the resources to supply this nation for hundreds of years. Let's find an economical way to develop this great resource."

GENE JOHNS (Senator, 59th District) (Democrat) was born October 6, 1927, in Carrier Mills, Illinois. Attended Harrisburg schools; graduated, Southern Illinois University majoring in Government. Served in U.S. Navy Air Corps; F.B.I. in Washington, D.C.; Principal of school in Saline County; administrator of Department of Business and Economic Development, Herrin; directed development of first two Economic Development districts in Illinois. Member: American Legion; Shrine; Elks; Eagles; Board of Directors, Southern Illinois Inc.; First Baptist Church. Serving second term in Senate. Member: Agricultural Commodity Commission; Economic Development Commission; Visitation Commission; County Problems Commission and Equal Opportunities Commission; Welfare Committee and Transportation Committee; chairman, Executive Committee and Agriculture and Conservation Committee; Illinois Energy Resources Commission. Owns petroleum distributorship in West Frankfort. Married Eve Prince; three children, Mark, Daredan and Dane. Address: 402 Bainbridge Road, Marion.

"The task of educating people to the enormity and complexity of the energy question may quite likely be the most demanding ever undertaken by a democratic system. Much of this burden will fall upon state government."

BOYD R. KEENAN (Public Member) was born June 29, 1928, in Parkersburg, West Virginia. Education: A.B. and M.A. Degrees from the University of Kentucky; Ph.D., University of Illinois. Former head of the Department of Political Science, Purdue University. Editor: Book, Science and the University (Columbia University Press), and author of its first chapter, "The Search for an Institutional System for Science." Articles in various journals on science and public policy and the management of higher education. Has served on several state councils and commissions, including chairmanship of Illinois Science Advisory Council, 1970-72. Present: Professor of Political Science, University of Illinois Institute of Government and Public Affairs and Department of Political Science at Chicago Circle. Member of Illinois Energy Resources Commission since its establishment.

"An environmentally compatible energy supply with recognition and utilization of all available resources through the energy of all of us in an environment of cooperation."

TOR KOLFLAT (Public Member) was born November 21, 1925, in Chicago, Illinois. Served in United States Air Force 1943-45. Education: B.S.M.E. and M.S.M.E. from Purdue University; supplemental post-graduate study at Illinois Institute of Technology and Northwestern University. Member: American Society of Mechanical Engineers - Fellow Grade; American Association; Atomic Industrial Forum; Institute of Electrical and Electronic Engineers; Western Society of Engineers; National Society of Professional Engineers. Published some thirty technical papers relative to energy in various publications; presented technical evidence and testimony to a U.S. Senate Committee and U.S. Supreme Court. Member of Illinois Energy Resources Commission. Partner and Assistant Manager of Mechanical Department of Sargent & Lundy in Chicago, Illinois. Consulting Engineer for energy supply and generation facilities for 21 years involving direction of basic engineering and design, also of economic factors development of design schemes and determination of optimum schemes. Married Luetta Robertson, four children, Dagmar, Kim, Gail, Leif. Address: 365 Elder Lane, Winnetka.

"Our agricultural lands must remain tillable for future generations' food supplies."

CLIFFORD B. LATHEROW (Senator, 45th District) (Republican) was born December 4, 1915, near Fountain Green, Illinois. Educated in local public schools, graduated from LaHarpe High School and Western Illinois University. Taught in High School six years before entering the United States Navy, served in Atlantic and Western Pacific Theatres, discharged as a Lieutenant; served on Board of Education; fourteen years as Township Supervisor, one year of which he served as Chairman of the County Board of Supervisors. Member: Presbyterian Church; American Legion; Elks; Masonic Lodge (33rd Degree Mason); Shrine; Veterans of Foreign Wars. Served as Republican member of the Senate in the 74th to and including the present 79th General Assembly; member of the Illinois Energy Resources Commission. Presently engaged in farming. He and his wife, the former Betty Hungate, have three children, Linda, Donald and Jerry. Address: Carthage. (R. R. #3)

"Until new sources of energy are developed, conservation is our best means for extending our fossil fuel supplies."

HARRY R. McNEELY (Public Member) was born February 23, 1911, in Peoria, Illinois. Educated in Peoria schools; attended two years Chemical Engineering at Bradley University; two years of Chemistry and Bacteriology at University of Illinois, graduating June, 1933. Process Control Laboratory, Supervising Bacteriologist, General Foreman of Processing, Milling, Fermentation and distallation; research at Terre Haute, Indiana Laboratories, Supervisor of Methanol Synthesis, Esterification Plant and Dry Ice Manufacturing at Commercial Solvents Corporation, Peoria. Staff Engineer, Plant Engineering Division; Utilities Engineer, Plant Engineering Division; Plant Engineer, East Peoria Plant; Corporate Manager, Energy Conservation, Caterpillar Tractor Co., Peoria. Member of Illinois Energy Resources Commission.

"Our major goal is to conserve and develop our energy resources, especially the usage of Illinois coal as coal; also to develop alternate energy resources."

JOE E. LUCCO (Representative, 56th District) (Democrat) was born April 29, 1912, Dawson, New Mexico. Education: Graduated from Greenville College with A.B. Degree and from the University of Illinois with a M.A. Degree in Government, History, Economics and Sociology. Teacher, coach and administrator for thirty-nine years; three state basketball teams and five in baseball. Serving first term in the House of Representatives. Presently on House Committee on Elementary-Secondary, High Education and County and Townships; member of Illinois Energy Resources Commission. He and his wife, Marina, have a married daughter, Marina Louise (Eovaldi), and son, Joseph William. Office Address: 109 Purcell Street, Edwardsville.

"Our future growth depends largely on an uninterrupted and plentiful supply of energy. That is what we are trying to assure for the good of all Illinois."

JOHN J. NIMROD (Senator, 4th District) (Republican) was born in Lakeview District of Chicago. Education: Chicago public schools; University of Illinois; Illinois Institute of Technology; Northwestern University, B.S. Degree in mechanical and industrial engineering, 1950. Combat veteran World War II and Korean conflict, six years service in Europe and Far East, graduated first in O.C.S. at Fort Benning, Georgia; six battle stars, combat infantry badge, bronze star and Wahrung Korean medal, honorably discharged as Captain, 1952. Consultant engineer in design and production; worked for General Motors and was president of plastics firm in Barrington. Assistant to chairman, Illinois Industrial Commission; assistant director, Department of Revenue; assistant to president, Cook County Board of Commissioners; supervisor, Niles Township, eight years; board of directors of Township Officials of Illinois; past president, State supervisors division; past president, Township Officials of Cook County; Niles Township Republican Committeeman. Member: Chicago Athletic Association; Y.M.C.A.; Masons; Shriners; American Legion; Amvets, past post commander; Executive Committee, Republican Central Committee; delegate to Republican Convention, 1968; Board of Governors Leaning Tower; past director, Skokie Civil Defense; Elder in Presbyterian Church. Appointed and presently serving as Minority Spokesman for the Senate Revenue Committee; member of Executive Committee; Labor and Commerce Committee; Elections & Reapportionment Committee; Multi-state Tax Compact Advisory Committee; Special Joint Subcommittee to Study Property Tax Reform; Illinois Economic and Fiscal Commission; Commission to Visit and Examine State Institutions and the Illinois Energy Resources Commission. Married to D. Ingeborg, four children. Address: 9216 Kildare, Skokie.

"Not only should we develop our energy resources but establish realistic energy conservation practices."

DANIEL M. PIERCE (Representative, 32nd District) (Democrat) was born March 31, 1928, Chicago. Educated: New Trier High School; Harvard College; Harvard Law School and U. S. Air Force Command and Staff School. Active duty with U. S. Air Force, 1952-54. Member: Illinois, Chicago and American Bar Associations; Lake County Urban League; American Legion; B'nai B'rith. Democratic State Central Committeeman, 1962-66, 1970 to present. Member: Executive Committee, Lake County Democratic Central Committee. Hearing officer, Illinois and Interstate Commerce Commissions, 1961-64; past director, Highland Park Jaycees and past political activities co-chairman, Illinois State Junior Chamber of Commerce; chairman, Highland Park Heart Fund, 1970-71, honorary director, Grove School, Lake Forest. Awards, 1975: Environmental Quality Award from Region V, W. S. Environmental Protection Agency; 1975 Environmental Legislator of the Year - Illinois General Assembly from the Illinois Environmental Council. Serving sixth term in House of Representatives; chairman, Energy Crisis Investigating Committee; chairman, Environment, Energy and Natural Resources Committee. Married Ellen Field, has three sons. Address: 1923 Lake Avenue, Highland Park.

"Our coal production in Illinois has decreased for the last few years. If coal is going to make this nation self-sufficient, we must have EPA standard releases that will allow Illinois coal to be used until new technologies are developed."

GALE SCHISLER (Representative 48th District) (Democrat) was born March 2, 1933, Knox County, Illinois. Educated Abingdon High School; Western Illinois University, B.S. Degree in Education; Northeast Missouri State Teachers College, M.A. Degree in School Administration. Served in the United States Air Force forty-five months in various locations in this country and in Europe. Taught at London Mills High School, 1959; Principal, 1960-64. Elected Congressman for the 19th District in 1964; served one term in House of Representatives (89th Congress), membership on House committee on Science and Astronautics. Assistant to Governors Otto Kerner and Samuel Shapiro, 1967-68 with the responsibility of heading up the Office of Intergovernmental Cooperation which was designed to coordinate state, federal and local programs and projects. Elected to the Illinois House of Representatives in 1968, representing the 48th District. Currently serving his fourth consecutive term in the House of Representatives; Chairman of the House Agricultural Committee; member of the Motor Vehicles Committee; Judiciary I Committee, and Illinois Energy Resources Commission. Married Carolyn K. Cochran, has three children, Kimberley Joy, Pamela Jill and Kurt Jeffrey. Address: Box 114, London Mills.

"Let's not put all our efforts on coal. Natural gas and petroleum resources must also be developed."

DONALD SCHMITT (Public Member) was born in Streator, Illinois. Educated in Illinois schools. Spent fifteen years as an independent oil producer, in retail furniture business since 1946. Member: Illinois Oil and Gas Association; Bloomington Chamber of Commerce; Colonial Plaza Merchants Association; Trustee of St. Stevens Church. Former Republican County Chairman of LaSalle County; member of Illinois Energy Resources Commission. He and his wife, Rosemary, have five children. Business Address: Colonial Plaza, 1500 E. Empire Street, Bloomington.

"Our future energy resource supplies will be available only if we plan for this development."

WALLACE W. WILSON (Public Member) was born May 26, 1918, in Mandan, North Dakota. Education: graduated from Pomona College, B.A. Degree; attended University of California (Berkeley), 1940; University of Texas, 1947-50; Southwestern Graduate School of Banking, graduate, 1962. Member: Society of Petroleum Engineers of AIME; American Petroleum Institute; Independent Petroleum Association of America (tax committee); American Mining Congress (Financial Advisory Council Executive Committee); Interstate Oil Compact Commission; Alpha Gamma Sigma; Sigma Gamma Epsilon; Knights of Columbus; National Council of Pomona College; Illinois Energy Resources Commission; Chairman, Energy Resource Management Committee, Illinois State Chamber of Commerce; presently Vice President, Commercial Banking Department, Special Industries Divisions - Energy & Mineral Resources Division, Continental Illinois National Bank, Chicago. Married Anna Katherine O'Brien, three children, Katherine Ann (Porter), John Charles and Diane Marie. Address: 9226 Kilbourn, Skokie.

ENERGY RESOURCES COMMISSION
PUBLIC ACT 78-1125
HOUSE BILL 2651

An Act creating the Illinois Energy Resources Commission and defining its powers and duties.

Be it enacted by the People of the State of Illinois, represented in the General Assembly:

Section 1. (S.H.A. ch. 93, Sec. 301)

There is created the Illinois Energy Resources Commission, hereinafter in this Act called the Commission.

The Commission shall consist of 3 members of the House of Representatives and two public members all appointed by the Speaker of the House; 2 members of the House of Representatives and 2 public members all appointed by the Minority Leader of the House; 3 members of the Senate and two public members all appointed by the President of the Senate; 2 members of the Senate and 2 public members all appointed by the Minority Leader of the Senate.

The Commission shall select from its membership a Chairman who shall be a legislative member and any other officers it considers necessary. The Chairmanship of the Commission shall rotate biannually between the houses of the General Assembly in accordance with the appointment schedule set forth in Section 2 of this Act,[1] except that the member of the General Assembly elected to be the first Chairman of the Commission shall be eligible to succeed himself for a second, consecutive term as Chairman.

The Commission shall meet at the call of the Chairman after due and reasonable notice to all Commission members, except that a majority of the Commission members may convene a meeting of the Commission in the event the Chairman refuses to do so.

[1]Chapter 93, Sec. 302.

Sec. 2. (S.H.A. ch. 93, Sec. 302)

The initial membership shall be appointed within thirty days after the effective date of this Act, and serve until June 30, 1975. Thereafter, the membership shall be appointed during the month of June in each odd numbered year and shall serve terms of two years, beginning on July 1 of the year in which they were appointed, or until their respective successors are appointed. All appointments must be in writing and filed with the Secretary of State as a public record.

Vacancies in the membership of the Commission shall be filled in the same manner as the original appointments. Members of the Commission shall serve without compensation, but shall be reimbursed for actual expenses incurred in the performance of their duties.

Sec. 3. (S.H.A. ch. 93, Sec. 303)

The Commission shall:

(1) Study, review and make recommendations on the administrative structure the State should adopt for the efficient management of the State's effort in finding solutions to energy related problems;

(2) study, review and make recommendations to coordinate the proposed or ongoing programs of the various State agencies with reference to the solution of energy related problems;

(3) study and make recommendations concerning a long-range program relating to energy resources and related problems, including but not limited to conservation of energy, development of energy resources, environmental considerations and other related problems;

(4) seek the cooperation and assistance of energy producers, institutions of higher education, energy research institutions, and other public and private organizations and groups interested in finding solutions to energy related problems;

(5) promote the establishment by the federal government of a coal resource, research and development center and other federal energy projects in Illinois, and search for additional or other means of using Illinois coal to meet Illinois energy needs with due attention to environmental priorities;

(6) disseminate relevant information to the public for purposes of consumer education and protection.

Sec. 4. (S.H.A. ch. 93, Sec. 304)

All proposed projects under the program of capital development of coal resources funded through the sale of general obligation bonds created in "An Act to provide for the financing of a State program for research, development and demonstration in coal and energy; to authorize the issuance and sale of general obligation bonds of the State of Illinois; and to provide for the payment of the principal of and interest on such bonds," enacted by the 78th General Assembly, shall be submitted for review and by a majority vote approval or rejection by the Commission. The Commission shall review and by a majority vote approve or reject each such project and a dollar cost range. Such review and approval or rejection shall be made within 45 days of the receipt of each proposal by the Commission.

No expenditure of general obligation bond funds for the development of coal resources shall be made without the prior approval of the specific project by the Commission, except that a specific proposal shall be deemed to be approved if the Commission fails to act within the 45 day period.

Sec. 5. (S.H.A. ch. 93, Sec. 305)

The Commission may, with regard to the Personnel Code, employ or contract for the personnel and services necessary to develop the capability of analyzing and making recommendations to the Commission pursuant to the provisions of this Act.

Sec. 6. (S.H.A. ch. 93, Sec. 306)

In aid of the Commission's work, all departments, divisions, agencies and offices of the State shall afford to the Commission any requested resources, information, records, or advice pertinent to the subject matter under study.

Sec. 7. (S.H.A. ch. 93, Sec. 307)

In the performance of its duties, the Commission may accept grants or funds from the federal government, foundations, or other public or private organizations.

Sec. 8. (S.H.A. ch. 93, Sec. 308)

The Commission shall submit an annual report of its findings and recommendations to the General Assembly, no later than March 15 of each year.

Section 9. (S.H.A. ch. 93, Sec. 301 note) This Act shall take effect upon its becoming law.

Approved and effective Aug. 19, 1974.

COAL DEVELOPMENT BOND ACT
PUBLIC ACT 78-1122
SENATE BILL 1659

An Act to provide for the financing of a State program for research, development and demonstration in coal and energy; to authorize the issuance and sale of general obligation bonds of the State of Illinois; and to provide for the payment of the principal of and interest on such bonds.

Be it enacted by the People of the State of Illinois, represented in the General Assembly:

Section 1. (S.H.A. ch. 93, Sec. 401) Short title

This Act shall be known and may be cited as "The Illinois Coal Development Bond Act".

Sec. 2. (S.H.A. ch. 93, Sec. 402)

As used in this Act, "coal" or "coal resources" include coal, coal products or by-products, including electricity and synthetic gas. "Development of coal resources" includes research, development, and demonstration of improved methods of discovery, production, transportation, sale, distribution, conversion, end-use and waste disposal of coal resources.

Sec. 3. (S.H.A. ch. 93, Sec. 403)

The Department of Business and Economic Development shall have the following powers and duties:

a) To solicit, accept and expend gifts, grants or any form of assistance, from any source, including but not limited to, the federal government or any agency thereof;

b) To enter into contracts with business, industrial, university, governmental or other qualified individuals or organizations to promote development of coal resources. Such contracts may be for, but are not limited to, the following purposes: (1) the commercial application of existing technology for development of coal resources, (2) to initiate or complete development of new technology for development of coal resources, and (3) for planning, design, acquisition, development, construction, improvement and financing a site or sites and facilities for establishing plants, projects or demonstrations for development of coal resources; and

c) In exercise of the other powers grants to it under this Act, to acquire property, real, personal or mixed, including any rights therein such as mineral or water rights, by exercise of the power of condemnation in accordance with the procedures provided by "An Act to provide for the exercise of the right of eminent domain", approved April 10, 1872, as amended.[1]

[1] Chapter 47, Sec. 1 et seq.

Sec. 4. (S.H.A. ch. 93, Sec. 404)

The Council shall be composed of the Governor, the Lieutenant Governor, the Director of the Department of Business and Economic Development, the Chairman of the Capital Development Board, the Director of the Department of Mines and Minerals, the Secretary of the Department

of Transportation, the Chief of the Illinois Water Survey, the Chief of the Illinois Geological Survey, the Chairman of the Illinois Commerce Commission and the Director of the Environmental Protection Agency.

The Governor shall serve as chairman of the Council and the Lieutenant Governor as vice-chairman.

Sec. 5. (S.H.A. ch. 93, Sec. 405)

The Council shall convene at the call of the Chairman. It shall advise the Department of Business and Economic Development in relation to projects authorized under this Act and shall offer to the Department such recommendations as it deems appropriate for the development of the coal resources of Illinois. The Council may also assist the Department in securing matching funds for projects authorized under this Act.

Sec. 6. (S.H.A. ch. 93, Sec. 406)

The Department of Business and Economic Development is authorized to use $70,000,000 for the purposes specified in this Act. These funds shall be expended only on projects for which previous approval of the Illinois Energy Resources Commission has been granted.

Sec. 7. (S.H.A. ch. 93, Sec. 407) Bonds

The State of Illinois is authorized to issue, sell and provide for the retirement of general obligation bonds of the State of Illinois in the amount of $70,000,000 hereinafter called "Bonds", for the specific purposes of acquisition, development, construction, reconstruction, improvement, financing architectural and technical planning and installation of capital facilities consisting of buildings, structures, durable equipment, and land for the purpose of capital development of coal resources. The aggregate amount of bonds which may be authorized by this Act is $70,000,000.

Sec. 8. (S.H.A. ch. 93, Sec. 408) Sale of bonds

Sec. 9. (S.H.A. ch. 93, Sec. 409) Authentication of bonds

Sec. 10. (S.H.A. ch. 93, Sec. 410) Bond proceeds

Sec. 11. (S.H.A. ch. 93, Sec. 411) Expenditure of funds

Sec. 12. (S.H.A. ch. 93, Sec. 412) Investment of proceeds

Sec. 13. (S.H.A. ch. 92, Sec. 413) Repayments

Sec. 14. (S.H.A. ch. 93, Sec. 414) Bond repayment - General obligations

Sec. 15. (S.H.A. ch. 93, Sec. 415) Default

Sec. 16. (S.H.A. ch. 93, Sec. 416) Treasurer and comptroller

Sec. 17. (S.H.A. ch. 93, Sec. 417) Refunding bonds

Sec. 5. (S.H.A. ch. 127, Sec. 141)

Sec. 19. (S.H.A. ch. 93, Sec. 418) Severability

If any Section, sentence, or clause of this Act is for any reason held invalid or to be unconstitutional, such decision shall not affect the validity of the remaining portions of this Act.

Section 20. (S.H.A. ch. 93, Sec. 401, ch. 127, Sec. 141 notes.) This Act takes effect immediately upon its becoming law.

Approved and effective Aug. 19, 1974.

*Sec. 8 - 17 of Public Act 78-1122 describes the bonding authority and procedure of the coal development bonds.

OBJECTIVES OF THE ILLINOIS ENERGY RESOURCES COMMISSION

The Illinois Energy Resources Commission was established by statute to provide a legislative base for coordinating state policy with national policy on energy and to develop a long-range energy plan for Illinois. It is responsible for the administration of energy activities and has defined its responsibilities in its Report to the General Assembly of the State of Illinois as follows:

(a) To prepare for submission to the General Assembly recommendations for an administrative structure designed to efficiently manage the state's efforts to find solutions to energy related problems.

(c) To formulate a long-range program for the management of energy resources and related problems, including, but not limited to areas of concern such as conservation of energy, development of energy resources and protection of the environment.

(d) TO INVENTORY ALL ENERGY RESOURCES IN THE STATE OF ILLINOIS.

(e) To design the structure of the approach to the State's energy conditions that will best serve the needs of the people of Illinois. This structure can be best developed by:

(1) Determining the status of energy programs.

(2) Developing a long-range stance.

(3) Developing an administrative structure designed to implement Energy-related programs.

These responsibilities have been met in part through existing programs of the IERC. Both the ongoing and soon-to-be implemented programs are described in the following plan that will establish an energy policy for Illinois.

TOWARDS AN ENERGY POLICY FOR ILLINOIS

The Illinois Energy Resources Commission is mandated by statute to develop a "long-range program relating to energy resources and related problems" for the State of Illinois. During its first year of operation, the IERC initiated its efforts by soliciting opinions from representatives of all energy sectors and from the general public in a series of 12 public hearings across the State. In addition to suggestions received in these settings, the Commission has been offered counsel in the form of many letters, telegrams, and citizen contact with its individual members.

The hearings and other types of "input" have emphasized the unprecedented need for Illinois and other states to develop an adequate "energy policy" within the context of the Federal system. Now, more than two years after the Arab oil embargo of 1973-74 signaled the need of cheap fuel for the Western world, the U. S. Congress and the President are still grappling with national energy guidelines. It has become clear that Illinois and other states cannot wait for clear and complete directives from Washington. Rather, each state must search for its own distinctive role as the broader process continues. Basic differences must be minimized and we must seek coordinative arrangements with other states.

We must also recognize that we pay a heavy price in terms of efficiency - at both the national and state levels in the United States - for "separation of powers" in government. Though cooperation between the executive and legislative branches is always a desirable goal, it is not easily achieved, in Washington or in state capitals. Thus, it is likely inevitable that the Federal government and every state will have at least two evolving "energy policies" - one being constructed by the executive branch and a second being devised by legislative leaders or their representatives.

The extent and intensity of conflict between the two sectors will be dependent upon many factors, but some friction will always be present. Since the Governor of Illinois, on August 4, 1974, signed into law the

bill creating the IERC and several other energy measures, such friction has become visible at times. Lack of controversy in an area as critical as energy would signal danger for our democratic system. A healthy "competition" between the two branches is a desirable condition.

In Illinois, the General Assembly, through explicit statutory language, has indicated its desire to have a clearly-defined "energy policy" before it at all times. And the IERC is given the task of developing such a policy. The rationale for mandating such a policy - or long-range plan - rests partially upon the need for continuity in such a critical area of state government. For example, creation of an ongoing Commission outside the framework of the executive branch guarantees sustained attention to energy problems from one administration to another.

RULES OF PROCEDURE OF THE ILLINOIS ENERGY RESOURCES COMMISSION

GENERAL PROCEDURES

1. Meetings of the Commission shall convene alternately in Springfield and Chicago every other month beginning in January of each year. Special meetings may be called either by the Commission or by the Chairman, who shall specify the time and place, and shall direct the Staff Administrator to notify the members of the Commission.

2. All meetings of the Commission shall be open to the public and public notice shall appear in the official State newspaper as designated by the Secretary of State Office at least seven (7) days prior to the meeting.

3. The proceedings of the Commission meetings shall be conducted in accordance with Robert's Rules of Order, Revised, except as otherwise specified in these rules.

4. At the July meeting of the Commission in odd-numbered years, the Commission shall elect from its membership a Chairman, Vice Chairman, and Secretary. All committees shall be named by the Chairman. Standing Committees shall be: 1) Technical, 2) Legislative, 3) Intergovernmental, 4) Energy Conservation.

5. The regular order of business shall be:

   (a) Call to order.
   (b) Roll call.
   (c) Reading and correction of minutes.
   (d) Reading of special communications.
   (e) Briefing of proposals by Business and Economic Development (Division of Energy).
   (f) Committee reports.
   (g) Commission and Legislative Staff Reports.
   (h) Other business.

6. The Department of Business and Economic Development of the State of Illinois will keep the IERC apprised in advance as far as practical and possible of impending projects to be submitted for funding review and approval. When the IERC is formally submitted a project for review and approval the methodology of review follows:

   A. BED will submit in writing to the IERC, with sufficient copies for members and staff: 1) request for approval to be acted on within 45 days, 2) summary review of the project, and 3) a list of all related supplemental information, letters, proposals, etc., available to IERC and conditions of availability such as location, secrecy releases, etc.

   B. Upon receipt by the IERC copies will be forwarded to all Commission members to review information submitted by BED, and then forward written comments and/or questions to IERC Technical Committee.

   C. IERC Technical Committee will consolidate all questions and/or comments from IERC members; establish a meeting with BED and project proposer for discussion of technical merits and resolutions of IERC questions and comments; it will then prepare and submit to IERC members responses to questions and comments, including Technical Committee's findings and recommendations.

D. IERC members will then discuss the project and arrive at a decision. Business and Economic Development will then be advised of the decision in writing within 45 days of the written request for approval of a project.

7. Minutes and recordings of meetings shall be on file at the Office of the Secretary of State, State Library, Document Section. Reports and studies conducted by the Commission relating to Commission activities specified in Illinois Revised Statutes, 1973, Chapter 93, Section 303, 1974 Annual Supplement, shall be completed and distributed.

8. It shall be the duty of the Executive Committee to audit annually the books of the Commission and make a report of their findings to the Commission. The Executive Committee shall consist of the Chairman, Vice Chairman, and Secretary of the Commission.

9. On March 15th, the Commission shall prepare a report of its proceedings and transactions. Such a report shall be drafted by the Staff Administrator and the Vice Chairman with the advice and approval of the Chairman of the Commission, and upon approval by the Chairman and the members of the Commission, the report shall be printed and distributed in accordance with the provisions of Rule 10.

10. All vouchers against the Commission shall be signed by the Chairman of the Commission and/or the Staff Administrator. A list of all vouchers processed shall be sent to the members of the Executive Committee quarterly.

11. Disseminate relevant information. The Commission shall disseminate relevant information to the public for purposes of consumer education and protection. Such information shall be disseminated by the Staff Administrator with the advice and approval of the Chairman of the Commission.

12. To study, review and coordinate proposed or ongoing energy programs of various State agencies. The Intergovernmental Committee shall hold meetings and evaluate such programs and report to the Illinois Energy Resources Commission its findings. Recommendations shall be forwarded to the General Assembly upon majority of Commission members present.

13. Requests for funding and/or endorsement of energy programs and/or proposals, other than coal related proposals, shall be in writing and should be directed to the IERC. State agencies requesting energy related funds and/or Commission endorsement should submit their proposals through the Intergovernmental Committee of the IERC.

14. The Chairman of the Commission or delegated employee may poll the members of the Commission by mail or by telephone to obtain their advice regarding decisions to be made by the Chairman on behalf of the Commission. Records shall be kept of those members' decisions at the Commission office.

15. All Commission members shall be provided with the following reimbursements:

    a. Transportation:

        (1) All transportation to be paid in full (air, train, etc.), or
        (2) 15 cents per mile car allowance.

b. Actual expenses for lodging.

Receipts are to be submitted with travel vouchers to support expenses claimed and/or maintained by Commission members for audit.

c. Meals:

(1) $12 per day.

d. Incidentals:

(1) $10 per day.

16. Commission employees and/or consultants when used by the IERC shall not exceed those allowed for legislative employees outlined by the Legislative Travel Control Board.

17. General Commission Administrative Office Procedures, such as personnel matters, coordinating various Commission tasks, etc. shall be the responsibility of the Staff Administrator of the Illinois Energy Resources Commission.

18. These rules may be adopted by a majority vote of the members of the Commission. Similarly, these rules may be amended, altered, or suspended by a majority vote of the members of the Commission.

GUIDELINES FOR IERC REVIEW AND EVALUATION OF ILLINOIS COAL BOND ACT PROJECTS

These guidelines are categorized into three areas. First is the "Basis of Review", second the "Criteria for Evaluation", and the third "Methodology of Review".

I. BASIS OF REVIEW

Foundation of IERC review and decision functions are embodied in the Illinois Coal Development Bond Act and the Energy Resources Commission Act. The specific purposes are:

> Development of coal resources include research development, and demonstration of improved methods of discovery, production, transportation, sale, distribution, conversion, end-use and waste disposal of coal resources. (IL Rev. Stat. Ch. 93, 402)
>
> Acquisition, development, construction, reconstruction, improvement, financing, architectural and technical planning and installation of capital facilities consisting of buildings, structures, durable equipment, and land for the purpose of capital development of coal resources. (IL Rev. Stat. Ch. 93, 407)

II. CRITERIA FOR EVALUATION

The criteria for evaluation are categorized into three areas of evaluation. The first is the Project per se, and the second is Project Applicability to Funding requirements and the third is Project Impact and/or National Energy Development.

1.) Project Per Se

This area of evaluation would attempt to ascertain whether the the project per se is a sound project by questioning Technology, Reliability, Economy, and Social and Environmental effects.

A. Technological Evaluation

1. What is the project schedule and does it appear to be practical?
2. For a large project involving several interrelated systems.
   (a) What are the separate systems?
   (b) What are the systems that actually utilize Illinois coal?
   (c) What is the relative importance of those systems that are not directly involved with the utilization of coal to the systems which are?
3. What percentage of the project may be classified as research and what percentage as development?
4. Does the project involve improving the efficiency of electric power generation? For example, conserving some form of our energy resources and/or other resources.
5. Is the time expected for commercial operation reasonable? Does it fit into the overall energy policy of the State and Nation?
6. What are the technical problems that need to be solved before the project is successful? Are these problems one of technic of operation materials limitation, or just require more experimental data? Is there sufficient money requested to do the job, or is it just the start of a long bleeding program? How far from their goal can they compromise and yet have a successful project? Is the step taken from the laboratory model to the pilot model and to the commercial model reasonable to be done in the time period allotted?
7. What are the alternatives open if the project will not succeed? Is there funds sufficient to support this new direction?

B. Reliability Evaluation

1. What is the experience and technical qualifications of participating companies in projects of this type?
2. Will all of the effort be by the participating companies or will any be subcontracted? If so, how much and to whom?
3. What is the experience and contemplated commitment of time of the specific team personnel representing the participating companies?
4. What is the project plan and does it appear to be well organized?

C. Economic Evaluation

1. What is the project cost budget, its limitations, and its basis?
2. Which companies or organizations are a part of the project and what are the operational and financial relationships?
3. How is the project effort organized within each participating company functionally and financially?
4. How soon and to what extent will returns from this project be realized?
5. What is the engineering economics of the project to determine its economic competitiveness in the near future with currently existing processes?

D. Social and Environmental Evaluation

1. What effects will the project have on the surrounding community?
2. Does the project involve the environmentally acceptable use of high sulfer content coal so prevalent in Illinois?
3. What are the stated and implied motivations of the participating organizations for the project?

2.) Project Applicability to Funding Criteria

This area of evaluation should ascertain whether the project qualifies and to what extent for funding. Some of the questions to be determined are as follows:

A. Does the project meet the specific purposes contemplated by the Illinois Coal Development Bond Act?

B. How does the project specifically contribute towards development of

Illinois coal resources?

C. Will the knowledge of operation and development of the project be public information or will some of it be retained as proprietary information?

D. What portion of the project effort is directly related to the development of high sulfur Illinois Coal?

E. Is the amount of funding requested from Illinois reasonably proportional to the total project and cost contribution by others?

F. Is the amount requested for funding for the specific project proportionate with a balanced distribution of the total available allocation under the Illinois Coal Bond Act to insure reasonable diversity of present and future projects?

3.) Project Impact on Illinois and/or National Energy Development and Illinois Coal Resources.

This area pertains to ascertaining the impact on Illinois and National energy development. Some questions in this area are as follows:

A. In what aspect will the project contribute to the Illinois and/or National Energy Development and independence?

B. Is the project redundant to other industry and/or government efforts?

C. How does the projects' potential benefit to the National and/or Illinois Energy Development compare with current commercial energy developments in regard to:

1. Schedule or timetable of application.
2. Precited performance.
3. Installation and operating costs.
4. Technical Feasibility.

III. METHODOLOGY OF REVIEW

The energy Division of the Department of Business and Economic Development of the State of Illinois will attempt to keep the IERC apprised in advance as far as practical and possible of impending projects to be submitted for funding review and approval. When the IERC is formally submitted a project for review and approval the methodology of review follows:

1.) BED submits in writing to all IERC Members:

   A. Request for approval to be acted on in 45 days.

   B. Summary review of the project.

   C. List of all related supplemental information, letters, proposals, etc., available to IERC and conditions of availability such as location, secrecy releases, etc.

2.) Upon receipt IERC members may:

   A. Review information submitted by BED.

   B. Forward written comments and/or questions to IERC Technical Committee.

3.) IERC Technical Committee will:

   A. Consolidate all questions and/or comments from IERC members.

   B. Establish meeting with BED and project proposer for discussion of technical merits and resolution of IERC questions and comments.

   C. Prepare and submit to IERC members responses to questions and comments, including Technical Committee's findings and recommendations.

4.) IERC Meeting

   A. Discuss project and arrive at decision.

   B. Advise BED of decision in writing.

COMMISSION FORMS STUDY PANELS FOR LONG RANGE ENERGY PLANNING

The Illinois Energy Resources Commission has formed several panels on energy. These panels were formed to advise the Illinois Energy Resources Commission on long range energy planning.

The panels consist of persons with unusual expertise in the areas of coal development; solar; solid waste and biomass; nuclear; natural gas and petroleum utilities, and energy conservation.

In order to aid the Commission in developing a sound energy policy for the State of Illinois, each panel will compile a report of recommendations for a near term (up to 1985), intermediate term (1985-2000), and a long term program (beyond 2000) for the specific energy area of each panel. In preparing this report, each panel will:

(a) review information from the public hearings held by the IERC;

(b) ascertain and maintain the statistical data base necessary to prepare reports and to incorporate data into reports;

(c) identify ongoing programs and research and development activities within Illinois;

(d) take into account new technologies being developed at the international, national and state levels;

(e) identify special energy funding opportunities for Illinois;

(f) identify merits and potential obstructions and recommend procedures for overcoming them;

(g) recommend possible options to implement the proposed program, and

(h) identify important literature pertaining to subject matter of the study panel.

The eight month study to be conducted by the energy panels will view energy in the context of total energy needs for the State of Illinois. Individual panels will assess energy demand/conservation, energy supply, delivery systems and risks of energy options.

The Coal Study Panel, Energy Efficiency Study Panel and Solar Study Panel met for the first time February 19, 1976. Their reports are included herein.

The other three study panels, Nuclear Study Panel, Natural Gas and Petroleum Study Panel and Utilities Study Panel will meet in April 1976.

Summary Statement on the Functions and Goals of the Coal Energy Study Panel

The Coal Energy Study Panel consists of 17 members from the commercial, industrial, academic, State and private sectors. They are: Jack A. Simon, Chief of the Illinois State Geological Society; Russell R. Dutcher, Department of Geology, Southern Illinois University - Carbondale; Jack Howard, Department of Business and Economic Development, Energy Division; James J. Stukel, University of Illinois; Charles E. Bond, Consolidation Coal; Dr. Bernard S. Lee, Institute of Gas Technology; Arthur D. Tevebaugh, Argonne National Laboratory; Dr. William C. Ackermann, Chief of the Illinois State Water Survey; Robert M. Lundberg, Commonwealth Edison Company; Thomas O. Glover, Liaison Officer, U.S. Bureau of Mines; Hugh M. Hulburt, Northwestern University; H. R. Heisler, Supervisor, Energy Systems Studies, Illinois Power Company; Sam T. Boleware, Illinois Central Gulf Railroad; Otis J. Gibson, Illinois Coal Operators Association; Einar V. Dyhrkopp, Tecumseh International; Robert J. Eby, Northern Illinois Gas Company; and, Rudy J. Kunshek, Jr., Environmental Coordinator of City Water, Light and Power, Springfield. At their first meeting, the panel named Jack A. Simon, Chief of the Illinois State Geological Survey as its Chairman. Dr. James P. Hartnett of the Energy Resources Center of the University of Illinois at Chicago Circle will act as the technical secretary to the panel.

Following are the areas of concern on which the panel members will focus their attention:

Coal Resources in Illinois

- Estimated resources and available reserves
- Geology and Mineability of Illinois coals
- Chemistry of Illinois coals
- Mineral matter in Illinois coals

Extraction of Illinois Coal

- Tabulation of current mines
- Size and productivity of current mines
- Size and announced capacity of new mines
- Projected distribution and mix (underground vs. surface)
- Manpower requirements
- Transportation requirements

Environmental consideration

Water requirements

Health safety considerations

Economic and Energy Costs Related to Use of Illinois Coal

Historical trends

Market values of coal

Projected markets for Illinois coal (including export)

Capital and equipment requirements

Imports of non-Illinois coal

Transportation

Technologies for Illinois Coal Utilization

Description of Technologies

Low Btu Gasification

Medium Btu Gasification

High Btu Gasification

Liquefaction

Solvent refined coals

Cleaning of coal at mines

Stack gas cleaning

Fluidized bed combustion

Coal blending

M H D

Water Requirements

Use of Illinois Coal in Central Power Stations

Historical trends

Environmental constraints

Technologies for Central Power Stations

Use of Illinois Coal as Industrial and Consumer Fuels

Use of Illinois Coal for Metallurgical Purposes

Other Uses of Illinois Coal (Chemicals, Fertilizers, etc.)

Institutional Impacts of Coal Development

Constraints on Development of Illinois Coal

Summary and Recommendations

Various panel members were appointed to be responsible for material for the report in the following areas: Coal Resources in Illinois; Extraction of Illinois Coal; Economics and Energy Costs; Technologies for Illinois Coal Utilization, Description of Technologies; Central Power Station; and, Industrial and Consumer Fuels.

The principal tasks of the Coal Energy Study Panel will be to assess the potential of coal energy use in Illinois and to provide policy recommendations for a comprehensive energy policy for the State of Illinois.

Summary Statement on the Functions and Goals of the Solar Energy Study Panel

The Solar Energy Study Panel had its first meeting in Springfield on February 19, 1976. The panel consists of sixteen members from the commercial, industrial, academic, State and private sectors: Dougald O. Black, NASA Science Advisor, State of Illinois; Dr. Walter L. Borst, Associate Professor of Physics, Southern Illinois University at Carbondale; S. H. Butt, Director, Market Research & Planning; Jerry L. Campbell, Home Builders Association of Illinois; Dr. Al Casella, Associate Professor and Coordinator, Physical Sciences Program, Sangamon State University; Ernest Dunwoody, Manager, Energy Conservation and Alternate Energy Section, Business & Economic Development; Bob Fredericksen, Commonwealth Edison Co., Hans Fischer, Fischer-Stein Inc.; Mike Jantzen; Roland Killian, Manager of Research and Development, Capitol Development Board; George Long, Ni-Gas; Dr. John H. Martin, Associate Director, ARF Division, Solar Energy Group; Y. B. Safdari, Professor, Department of Mechanical Engineering, Bradley University; Dr. Gene G. Shove, Professor of Agricultural Engineering, University of Illinois; Dr. Roger Whitmer, Associate Professor, Department of Architecture, University of Illinois, Chicago Circle Campus, and Edwin Wingfield, Windmill Company. At the above meeting, the panel named Dr. Walter L. Borst, Associate Professor of Physics at Southern Illinois University at Carbondale as its chairman. Dr. P. V. Sudhindra of the Energy Resources Center of the University of Illinois at Chicago Circle will act as the technical secretary to the panel. Mr. D. Handy and his staff from the Illinois Energy Resources Commission will provide additional logistical support to the panel for its meetings and communications.

The principal tasks of the Solar Energy Study Panel will be to assess the potential of solar energy use in Illinois and provide policy recommendations for a comprehensive energy policy for the State of Illinois. Individual areas to be considered by the panel in the forthcoming months are the feasibility of solar energy use in Illinois,

availability and marketability of solar equipment, potential energy savings from the use of solar energy, general aspects of solar-oriented building design, "sunrights", building codes, tax incentives, and others. A detailed list of the topics under consideration can be found in the attachment.

The panel will seek to establish the necessary base for the increased use of solar energy wherever and whenever this is technically and economically feasible. It is anticipated that the final report of the study panel will contain specific recommendations on the most efficient and energy conserving use of our most abundant and cleanest alternative energy source, i.e. solar energy.

ENERGY EFFICIENCY STUDY PANEL PROGRESS

The Energy Efficiency Panel has held one meeting to date -- during February 1976 in Springfield. The panel consists of twenty members from the commercial, industrial, academic, State and private sectors. They are: Jerry Campbell, Home Builders Assn. of IL; Charles W. Brubaker, President, Perkins & Will Architects; John T. Black, Dubin, Dubin, Black and Moutoussany; Dave Rossin, Commonwealth Edison; John Miller, Peoples' Gas, Light & Coke Company; Dr. David Yaseen, Department of Transportation; Dr. Al Golden, DeKalb Ag. Research; Nick Miller, C.A. Dawson; Sam Aldrich, Ag. Experiment Station; Paul Gilson (Ex-officio), Federal Energy Administration; Dr. George Leppert, Argonne National Laboratory; Ernest Dunwoody, Business & Economic Development; David L. Grumman, P.E., Enercon, Ltd.; Russell Stauffer, Assn. IL Electric Cooperatives; Dale Fitzpatrick, P.E., Effingham; Bill Udovich, Republic Steel Company; Kathy Huther, League of Women Voters; Dr. Peter Kakela, Sangamon State University; Mr. Harry McNeely, Caterpillar Tractor Co.; and, Mr. Wallace Wilson, Continental IL National Bank.

At this first meeting, some general ideas were suggested by the committee members on what the most appropriate ways would be for the panel to fulfill its role of advising the Commission on suitable energy conservation plans for Illinois. Panel members were asked to submit in writing their ideas concerning energy conservation options: how they can be defined, analyzed and evaluated.

It was obvious to those familiar with the technical end of energy conservation that there are certain areas where considerable energy can be saved with relatively little effort and at relatively low cost. One such area is energy conservation in existing buildings. There is little doubt that there is lots of energy to be saved in this area with virtually no decrease in comfort or environmental conditions, and with a rapid return on any capital investment required. (A surprisingly large number of effective energy conservation measures show a payback of under two years- often even a matter of months). This would be an area where fast, easily measurable results could be obtained over a relatively short time period. The Energy Efficiency Panel will be examining this area closely and soon.

Another conservation area the panel will be looking at is the recent conservation standard developed by ASHRAE for new building construction. This standard was formally brought to the attention of the Commission in a Public Hearing earlier this year prior to its final completion. While new buildings do not represent a large segment of energy savings (since there are not that many built compared to the existing building stock), steps should nevertheless be taken now to ensure energy-

efficient design of new construction from this time forth. While the standard is prescriptive in nature rather than performance-based, it does have flexibility. Also, there is evidence that the FEA would prefer to see a performance-based standard (such as a building energy consumption index) implemented by the states -- with the ASHRAE standard possibly being used as a guide.

The FEA has already commissioned and received a study on the impact of this standard on cost and building industries in the U.S. were it to be adopted in full by the states. As expected, the energy savings it could achieve for new construction are substantial -- on the order of 30-45%. But the most interesting aspect is its impact on building economics: while it might be expected that the first cost of buildings would increase due to this standard, such is not the case. Initial construction costs of buildings assumed to be built utilizing this standard were shown to be reduced from between 4¢ and 94¢ per sq. ft., with the greatest savings being projected for office buildings. Here is an area where the legwork has already been done and the impact assesed. The panel will be giving priority attention to this area as well in its coming meetings.

State Representative Adeline J. Geo-Karis (right), chairman of the Illinois Energy Resources Commission, and Doug Black, technical consultant to the State of Illinois from the National Aeronautics and Space Administration, examine solar collectors at an experimental project on the Springfield campus of Sangamon State University.

ENERGY SEMINARS

In cooperation with the Illinois Legislative Council, and the Illinois Legislative Studies Center at Sangamon State University, the IERC held three energy policy and technology seminars. The purpose of these was to present information about various coal development policies throughout the country, and to provide some fundamentals about energy technology to Illinois legislators and their staffs.

The first seminar, held April 22, 1975, dealt with coal development policies in other states. Speakers were representatives from Montana and Ohio, as well as Illinois, and from the National Conference of State Legislatures. The May 6 seminar consisted of discussions of Alternate Energy Technologies including solar technology, nuclear technology, and energy production from solid waste. The third seminar, held May 20, presented information concerning technologies for Natural Gas and Synthetic Natural Gas, Petroleum and Synthetic Crude Oil, and Direct Combustion of Coal.

COMMISSION MEETINGS

At the organization meeting held December 13, 1974, Representative Adeline Geo-Karis was elected Chairman; Senator John Knuppel, Vice-Chairman; and Otis Gibson, secretary. Statements were heard from Dennis Hayes, Illinois Energy Coordinator, and from Ted Silverman, acting director of BED.

The second IERC meeting held January 30, 1975, was concerned with statements by Jack Simon, Acting Chief of the Illinois Geological Survey, on combining coal and water resources in Illinois; by John B. Stall, of the State Water Survey, on data concerning Illinois water resources; and by Sidney M. Marder, Director of the Energy Division of the Department of Business and Economic Development, on the activities of his department. Also at this meeting, Donald G. Handy was retained as staff administrator and Merle White was retained as secretary to the Commission.

Coal conversion possibilities were considered at the February 21, 1975 meeting. R. John Fallon, from the Federal Energy Administration, Washington, D. C., explained Washington's interest in increasing coal use. Dr. Chris Knudsen, Office of Energy Research and Development, Washington, D. C., informed the Commission of the federal government's spending hundreds of millions of dollars each year on coal research. It was announced that Northern Illinois Gas Company was seeking participation from ERDA and the State of Illinois in a research and development project to convert Illinois high-sulfur coal to clean liquid and gaseous fuel.

Energy reserves were discussed at the March 6, 1975 meeting with statements from representatives of several companies and agencies. A proposed General Electric Pressurized-Fluidized Bed Pilot Plant to be located at the Wood River Power Plant of Illinois Power Company was presented. Representatives from the Illinois Environmental Council requested the Commission to act on matters of environmental control before eminent domain were exercised by BED. Dr. John Munkers, of Sangamon State University, said that fossil fuels, uranium, and gas-thermal energy are not running out. Glen Seay, of the Institute of Gas Technology, reported that known supplies of natural gas are rapidly decreasing.

The April 11 Commission meeting, held in Waukegan, was dominated by energy reports on three energy resources: solar, nuclear, and the conversion of coal into petroleum. Robert Ragsdale, Solar Program Director of the NASA Lewis Research Center in Cleveland, Ohio, reported on the solar program, noting its high costs and the federal Government's $1 billion solar energy program that could help the cost problems. Dr. Robert Laney, from Argonne National Laboratory, pointed out the increased importance nuclear power is expected to have in the next ten years. Dr. Ernest Pollitzer, from Universal Oil Products Company, DesPlaines, discussed the feasibility of converting coal to

petroleum, explaining that the UOP preferred coal liquefaction to gasification. Approval was granted to Dr. James Hartnett's request that the University of Illinois, Chicago Circle Campus, be designated an energy conservation center.

The primary business of the April 22 Commission meeting was the appointment of committee chairmen. Senator Nimrod, chairman of the Technical Committee, outlined important areas of the committee, such as setting up a procedure to evaluate IERC projects.

Sidney Marder, head of the Energy Division of the Department of Business and Economic Development, explained the Division's functions at the May 28 Commission meeting. Marder emphasized that the division reviews coal development projects. Chairman Geo-Karis explained HB 1704 which would designate $10 million for the development of alternative energy sources. Marder responded that his Division would oppose the measure.

Marder was the main speaker at the June 17 Commission meeting, reporting that the BED's Energy Division planned to make a site bid presentation in New York for the Coalcon project. It was decided that two public members from the IERC would be included in the delegation to New York.

The main topic of business at the November 5 Commission Meeting was the formal presentation of the General Electric project by Mr. Harold Finger. A summary of the Technical Sub-committee's report on the General Electric project was also given at that time. The Commission approved $10 million of the Coal Development Bond money for the General Electric project to be located in Wood River, Illinois.

At the Commission's organizational meeting held November 19 Senator John Knuppel was elected Chairman; Representative Adeline J. Geo-Karis was elected Vice Chairman; and, Dr. James Hartnett, Secretary. Representative Geo-Karis was presented a plaque by the Commission members in appreciation of her serving as the first Chairman of the Commission.

An informal presentation of the Coalcon project given by representatives of the Coalcon Corporation highlighted the January 14 Commission meeting. The Energy Research and Development Administration has awarded funding to the Curtis-Wright project to be located in New Jersey rather than to the General Electric Illinois site. The Commission approved the formulation of study panels to aid the Commission in a long-range energy plan and an amount not to exceed $25,000 was allocated to cover expenses and preparation of reports. The Department of Business and Economic Development was asked to assist the Commission with the study panels by joint funding. The Commission accepted the concept of the Energy Coordination Program for the State of Illinois.

HEARINGS

The Commission held public hearings on energy at 12 locations throughout the State. The specific purpose of these hearings was to obtain public response concerning Illinois' energy policy, to be developed by the legislature based on recommendations of the Commission. The dates and locations of these were:

July 22	Carbondale
July 29	Peoria
August 19	Quincy
August 26	Danville
September 9	East St. Louis
September 16	Rock Island-Moline
September 23	Rockford
September 30	Springfield
October 7	Chicago
October 9	Wheaton
October 21	Waukegan
November 13	Granite City

Summary of Recommendations

There were several notable points brought to light during the hearings that will be an influence on the development of the Illinois Energy Resources Commission.

1) Overall responsibility for energy planning and management including allocation, conservation, research and development, should be coordinated by one State group.
2) As policies are formulated, the Commission should keep in mind the effect that policies have on distribution, marketing and pricing of a product, because inequities, spot shortages, price dislocations can be created.

3) Consideration to the establishment of an Energy Management Information System that would allow the State of Illinois to be aware of its energy supply and projected energy demands. The system would also allow evaluation of the impact of policy decisions before and after they are instituted.

4) The Illinois Energy Resources Commission should study the possibilities of future energy parks -- multiple generating facilities at one site with an aggregate range of 10,000 to 20,000 megawatts.

5) The Illinois Energy Resources Commission should review policy of departments of State governments that affect production, distribution, and consumption of energy and related products.

6) The Illinois Energy Resources Commission should coordinate energy matters among various State departments.

7) The Illinois Energy Resources Commission should advise the State agencies on energy related activities.

8) The Illinois Energy Resources Commission should advocate intermittent controls to enable coal companies to supply coal to the utilities and generate amount of electricity required.

9) The Illinois Energy Resources Commission should encourage direct burning of coal and use of coal for generation of electricity.

10) Funds should be provided for programs to convert coal to cleaner fuels or to burn, as is, without degrading environmental quality.

11) The Illinois Energy Resources Commission should review conservation practices of all State agencies in their operation including construction of public buildings and program activities.

12) Through review of EPA policies and procedures, determine the feasibility of coal fired power plants utilizing intermittent controls rather than emission limitations to achieve ambient standards.

13) Encourage the installation of nuclear power plants to meet the increasing energy demands;

14) Cooperate with State agencies in developing Illinois' "State Plan" in response to the federal "Energy Policy and Conservation Act".

The testimony heard by the Commission covered a wide spectrum of the energy and environmental question. Most proposals encountered could be classed into one of three categories:

1. Assume a problem that may be a popular "cause", but also may not have any substance;
2. Attribute to the IERC particularly, and State government generally, authority that has not been mandated; and,
3. seek a solution to problems that clearly provide advantage to one interest group at the expense of others.

The IERC mandate requires that the Commission investigate and recommend legislation and coordinate energy related activities within the State, but not to develop into an operating or regulating agency.

Much reference during the hearings was made towards possible IERC involvement in research or research sponsorship. It would be unwise for the Commission to recommend more research than could be accomplished by industry or various other established groups. The philosophy of the Commission on this matter was best stated by IERC Chairman, Senator John L. Knuppel, when he responded to the research funding question by saying that ' . . . the researchers of the State are our "books on the shelf" and the time has come to take them down and put them to use to solve our energy problems . . . ' The Commission's major energy fuel concern, by mandate, is to encourage

the development of Illinois coal by such projects as demonstration plants. This is being accomplished through the funding authority of the Coal Development Bond Act.

Testimony requesting state involvement in such matters as natural gas supply is generally beyond the scope of the IERC since it involves federal regulation of interstate prices set on the federal level.

COMMITTEES OF THE

ILLINOIS ENERGY RESOURCES COMMISSION

Ten Committees have been formed by the Energy Resources Commission to provide the Chairman with member input in various areas of study. Each Committee establishes methodology to achieve goals set by the entire Commission. Following is a brief description of the responsibilities of each Committee, a listing of Committee members and Chairmen:

1) Technical Committee

Senator John Nimrod, Chairman

Senator John Knuppel

Mr. Richard Gallagher

Dr. James Hartnett

Mr. Wallace Wilson

Mr. Harry McNeely

Representative Adeline Geo-Karis

Mr. Tor Kolflat

This committee was established to investigate scientific and technical matters. Its responsibilities are to:

a) Evaluate and make recommendations to the Commission concerning the technical content of funding requests received by the Commission.

b) Provide other members of the Commission with technical information concerning funding requests when required.

c) Seek the advice of Scientist and scientific groups in Illinois on energy funding projects and other energy related matters.

2) Intergovernmental Committee

Representative Joe Lucco, Chairman
Mr. Harry McNeely
Mr. Boyd Keenan

Inter-Agency Task Force

Larry Aldag, Department of Agriculture
Hap Day, Atomic Energy Commission
Edward Malevich, Attorney General's Office
Charles Devers, Bureau of the Budget
Pete Rumsey, Bureau of the Budget
Sheridan Glen, Business and Economic Development
Doug Black, Business and Economic Development
Roland Killian, Capitol Development Board
Ernest Melkush, Civil Defense
Dr. Robert Podlasek, Commerce Commission
Bridget Lane, Department of Conservation

George McVicar, Department of Corrections
Michael P. Manzy, Environmental Protection Agency
Lance Bedwell, Office of Education
Sam Booras, Institute of Environmental Quality
Tom Lawry, State Geological Survey
Jim Murphy, Department of General Services
Eugene Beard, Department of General Services
Carol Kruse, Manpower Development
James Long, Manpower Development
Allen Grosboll, House GOP Staff
Ben Martin, Insurance Department
Tom Glover, Department of the Interior
Don Johnson, Department of Labor
Major Orin Lowder, Law Enforcement
Neil Hartigan, Lieutenant Governor
Jarl Trammel, Local Governmental Affairs
J. L. McGrath, Mental Health & Developmental Disabilities
John Phipps, Military & Naval Department
George Lane, Mines & Minerals
George Anne Daly, Department of Personnel
Ron Parish, Department of Public Aid
Leroy Stratton, Department of Public Health
John Briggs, Department of Revenue
Paul Fordonski, Veterans Commission
Robert Horn, Vocational Rehabilitation
Harry James, Department of Transportation

The Task Force was formed in order for the various agencies and departments in the State to work together toward a unified energy goal. This committee is an integrated effort of these agencies to promote communication among themselves on matters of energy, and to avoid duplication of effort. Its responsibilities are to:

a) Provide a forum for the agency representatives to discuss ideas of energy conservation, incentives for reducing energy consumption, seeking alternative energy resources and practices, and methods of providing education on energy related matters, as these areas relate both to the employees of the agency and to the public sector served by the agency.

b) Make recommendations to the member agencies concerning energy matters.

c) Make recommendations through the Chairman for proposed energy-related legislation.

The following Statement of Principles is intended to give the Task Force some code to operate from. Its intent is not to be specific, but rather to be broad in scope.

STATEMENT OF PRINCIPLES

ARTICLE I - Inventory of Energy Resources and Consumption

Section 1 - In order to assess the availability of energy resources, the current energy consumption patterns of the various agencies, and the expected energy needs of these agencies in the future, the Task Force recommends that an inventory of these areas be taken.

Section 2 - The Task Force recommends that each agency (a) collect data on its energy consumption; (b) conduct an energy audit on public buildings and vehicles to establish baseline consumption patterns; (c) establish a contingency plan to be implemented in case energy shortages force a cutback in services and operations; (d) evaluate projects and programs to determine whether they are appropriate for jurisdiction under that agency; and, (e) estimate its future energy demands, and the demands of the public sector it serves, so that long range energy demands of the state may be projected.

ARTICLE II - Mobilization of Available Resources and Personnel within each Agency

Section 1 - So that the Task Force may be established as an integrated effort among agencies, and with representation from each agency, an energy coordinator, not necessarily a full-time position, will be designated from each agency to take responsibility for energy-related affairs.

Section 2 - The Task Force recommends that the agency energy coordinator be responsible for (a) the development of an energy education program for that agency and its employees; (b) distribution of energy information to the public sector served by the agency; and, (c) reports to the Task Force on developments and practices of the agency.

Section 3 - The Task Force recommends that the agencies (a) coordinate and arrange meetings, visits, etc. so that more employees can utilize the same means of transportation; (b) revaluate energy related programs and regulations that may be very costly for the public during the current depressed economic conditions; and, (c) limit energy expenditures for travel, both by encouraging employees to reside near their place of employment, and by revaluating the location of the office in cases in which it is too distant from the places where the majority of the work is done.

ARTICLE III - Education

Section 1 - Recognizing the importance of education in increasing the awareness of the public concerning the shortages and problems of energy, and methods of reducing energy consumption, the Task Force suggests that agencies seek to inform both their employees and these sectors of the general public with which they are charged.

Section 2 - The Task Force recommends that the agency energy coordinators hold seminars, conferences, and workshops, or other means to inform employees and those public sectors the agency serves, of the energy problems and shortage situations developments in energy production, and particularly to teach and encourage practices which conserve energy. Employees should also be informed of current energy policies of the agency, the state, and the federal government, and should encourage employees to honor these policies.

ARTICLE IV - Energy Conservation

Section 1 - The Task Force will encourage agencies to limit energy consumption in every way possible.

Section 2 - The Task Force recommends that each agency (a) record energy conservation programs and evaluations and make reports of these available to the Task Force; (b) develop and implement a preventive maintenance program for its equipment; (c) develop a comprehensive energy conservation plan for its agency; (d) provide energy conservation advice to the public sector it is responsible for; and (e) purchase energy-efficient equipment to the greatest extent possible.

ARTICLE V - Development of Alternative Energy Resources and Practices

Section 1 - The Task Force urges the agencies to involve themselves in seeking alternative energy sources and practices through a coordinated effort which will prevent duplication of effort among the agencies.

Section 2 - The Task Force recommends that the agencies (a) study and review capital expenditures and, to the extent possible, to utilize energy-saving techniques and the development of alternative sources of energy; (b) study, review and propose programs that would extend present energy sources; and, (c) encourage and promote the use of alternate means of commuting to work which would save energy.

ARTICLE VI - Formulation and Adoption of Legislation

Section 1 - The Task Force encourages agencies to study, review and suggest to the Task Force any programs or recommendations on energy matters that may then be introduced as legislation.

Section 2 - The Task Force recommends that agencies (a) study, review and propose to the Task Force incentives and other means for encouraging a reduction in energy consumption; (b) study, review and submit proposals to the Task Force for tax and other incentives for the development of alternative energy sources; (c) develop energy conservation programs and submit them to the Task Force; and, (d) suggest to the Task Force means of educating the public concerning energy matters through state-supported energy education programs.

3) Legislative Committee

Senator Kenneth Buzbee, Chairman

Senator John Knuppel

Senator John Nimrod

Senator Clifford Latherow

Representative Gale Schisler

Representative Ralph Dunn

Representative Daniel M. Pierce

Dr. Boyd Keenan

The IERC must be aware of action that is being taken on energy problems throughout the country. This committee's responsibilities are therefore to:

a) Review information (studies, reports, etc.) concerning energy related topics (i.e. affecting an energy program) from all sources (Illinois, other states, federal and industry) in order to determine its relevency and/or impact on the State of Illinois.

b) Review energy legislation (proposed and/or enacted) in Illinois, other states and on the federal level.

c) Determine the impact (if any) of all legislation (item #2) on Illinois.

d) Develop, both as a committee and individually, a report with colleagues in the General Assembly fostering a reputation of expertise in the area of energy questions so as to serve as spokesmen to influence the General Assembly favorably concerning the policy direction established by the Commission.

e) Develop, both as a committee and individually, a report with members of the Illinois Congressional Delegation, in order to foster a viable two-way communication so that the policy direction of the Commission is understood by the Delegation and therefore maintain an Illinois influence on energy questions as developed and presented on the federal level.

f) Make recommendations to the Commission concerning legislative measures to implement energy policy in Illinois.

g) Develop original legislation, as necessary and/or desired, to favorably influence the policy direction established by the Commission.

h) Develop, as necessary, amendments to Illinois legislation during committee or floor action of the General Assembly so such legislation agrees with the policy direction of the Commission.

4) Energy Conservation Committee

Mr. Harry McNeely, Chairman

One of the most important measures needed to solve energy problems is to motivate every person and industry in Illinois to participate actively in conserving energy. The Energy Conservation Committee was combined into the Energy Efficiency Study Panel with Harry McNeely as Chairman of the Panel in the beginning of 1976. This committee has the responsibility to:

a) Encourage and promote conservation practices in all sectors of the State, specifically residential, commercial, industrial, transportation, and governmental.

b) Increase public awareness of the energy shortage and need for conservation by working through the media, schools, libraries, and governmental bodies.

c) Recommend legislative action that would promote energy conservation in Illinois.

5) Committee on Energy Finance and Economics

Mr. Wallace Wilson, Chairman

Energy programs must take into consideration the need for a logical approach to their financing and costs. This committee has been assigned the responsibility to:

a) Explore the cost of energy programs recommended by other committees and suggest sources of financing for those energy programs.

b) Review the economic competitiveness of new approaches suggested for solving the energy problem.

6) Committee on the Environmental Impact of Energy

Mr. Richard Gallagher, Chairman

To be complete, any energy program or policy must be formulated after an assessment of its impact on the ecosystem affected by it. The Committee on the Environmental Impact of Energy has the responsibility to:

a) Investigate the environmental effect of any existing programs or those proposed and initiated by the IERC.

b) Recommend legislation for maintaining environmental quality.

7) Committee Liaison to the Senate

Senator Clifford Latherow, Chairman

It is important that the IERC communicate with the legislative body. This Committee has the responsibility to:

a) Receive and review suggestions from members of the Senate concerning energy policy.

b) Inform the Senate of actions taken by the IERC.

8) Committee Liaison to the Governor

Representative Gale Schisler, Chairman

It is the responsibility of this committee to send communications to and receive communications from the Governor and the executive branch of government concerning energy policy.

9) Committee Liaison to the General Assembly

Senator Gene Johns

This committee, like the Committee Liaison to the Senate, has the responsibility to:

a) Receive and review suggestions from members of the General Assembly concerning energy policy.

b) Inform the General Assembly of actions taken by the IERC.

10) Committee to Energy Centers

Representative Ralph Dunn, Chairman

Throughout the State of Illinois, many energy centers are working independently in various energy-related areas. This committee was formed to aid in the coordination of the proposed or on going energy programs at the various energy centers in the State of Illinois. Its responsibilities are to:

a) Receive and review requests from energy centers to be designated by the IERC as Energy Centers.

b) Advise the centers of IERC activities.

c) Coordinate IERC activities with the Energy Centers.

PROMINENCE OF COAL IN ILLINOIS SETTING

It is evident from the Commission's early findings that the accident of geology presents the decision makers in the State of Illinois with a set of energy challenges and problems probably unique among the states. One condition virtually dominates the total energy scene in Illinois. This is the presence of the well-publicized bituminous coal reserves in the State, estimated at about 150 billion tons and by far the largest of any state.

Of course controversial issues relating to nuclear activity and other fuel sources must not be overlooked in Illinois, but the State's posture on coal development is likely to be the cornerstone of its energy policy. Indeed, the enabling statute creating the Commission contains a provision which gives the body authority to approve (or disapprove) coal development projects recommended by the Illinois Department of Business and Economic Development (BED) for funding through the State's Coal Development Bond Act. Thus, even if it were so disposed, the Commission could not avoid placing high priority on the issue of coal development in Illinois. It is mandated by the General Assembly, then, both to develop a broad long-range energy plan and to provide oversight of coal development for the State. Whether the experience of the past year supports retention of such parallel statutory functions in a single legislative commission is a question worthy of discussion in future years. But a more critical need initially is an ongoing analysis of the attitudes of Illinois citizens towards energy in general and coal development in particular, as expressed during the hearings and in other contexts.

Many Illinois energy specialists have argued that the Commission's only responsible path is that of concentrating its attention on coal development, even if such attention precludes its other major task, that of devising a broad long-range energy plan. For instance, testifying in October (1975) before the Commission, a reputable university scholar

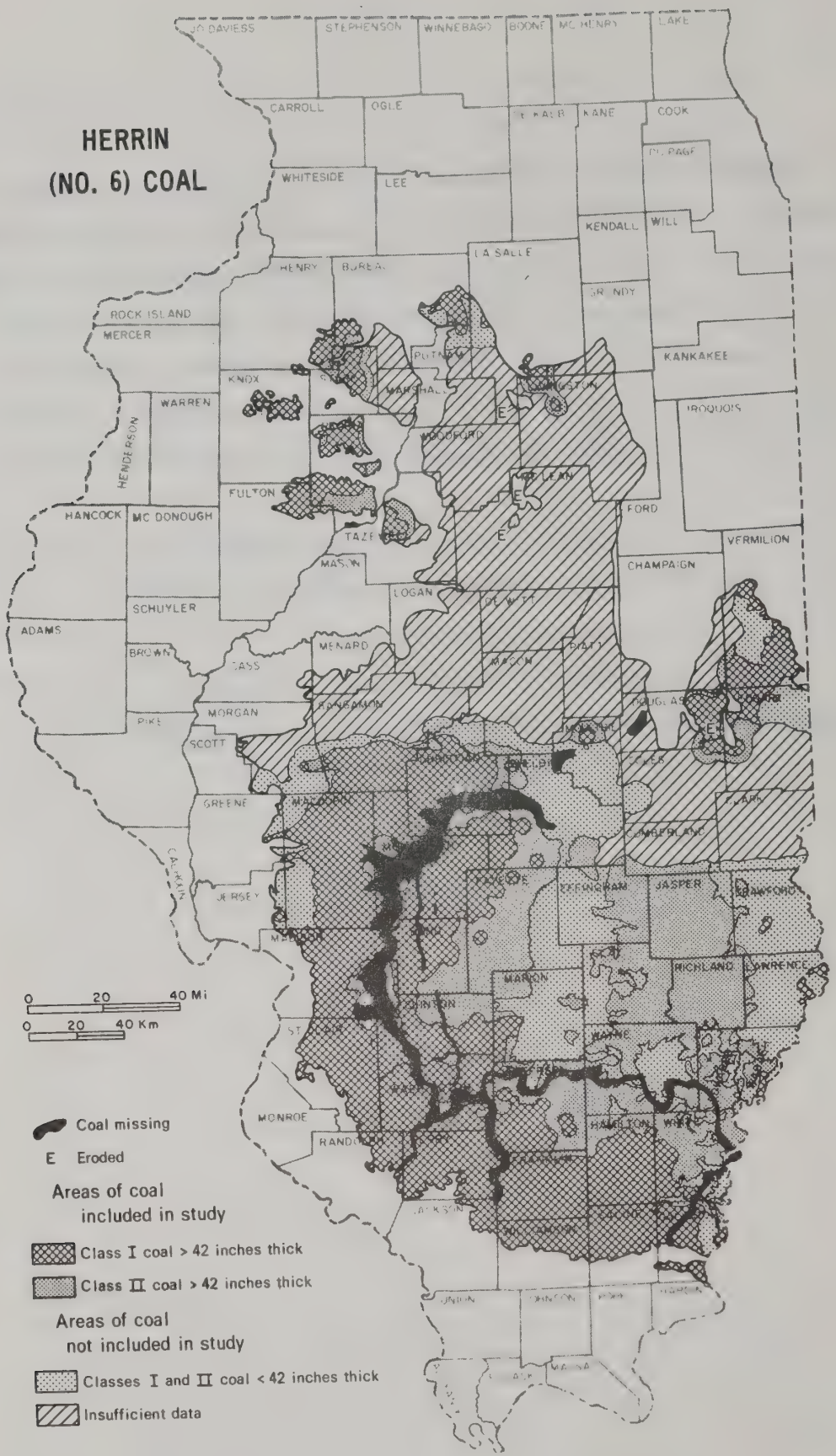
declared it was "actually a scandal" that no bond dollars had been made available to that point (or even requested by BED) for coal development. (Since that date, action to stimulate projects has been taken by BED and the Commission is reviewing several projects in anticipation of formal recommendations by BED.)

This energy specialist was among those who urged the IERC to accept its mission chiefly as that of encouraging and promoting the development of low-cost energy from Illinois coal. Many appearing before the Commission have contended that enough agencies, both state and Federal, already are dealing with "environmental" issues and that the IERC should not unnecessarily become involved in such matters. This view may be technologically sound, but it ignores the specific charge from the General Assembly for the IERC also to give attention to "environmental considerations and other related problems." Thus, the Commission increasingly is striving for both to meet its stationary mandate of reviewing coal development projects and to fulfill other broad responsibilities granted it.

Herrin (No. 6) Coal is the most extensively mined coal seam in Illinois. 75 percent of Illinois coal production in 1973 came from the Herrin seam. It has reserves totaling 59 billion tons of which 56 percent is 6 feet or more thick. Herrin coal has been mined more extensively in southern Illinois than in other parts of the state. It is strip mined where it is closest to the surface along the northern and western boundaries of the seam. Fortunately, the coal is thickest at moderate depths.

There is an estimated 1,873 million tons of low sulfur coal in the Herrin seam (less than 2.5% S, average 1.5% S). These reserves are located in the western and southern areas.

Class I coal as shown on the map includes proved and probable reserves while Class II coal represents strongly indicated reserves.



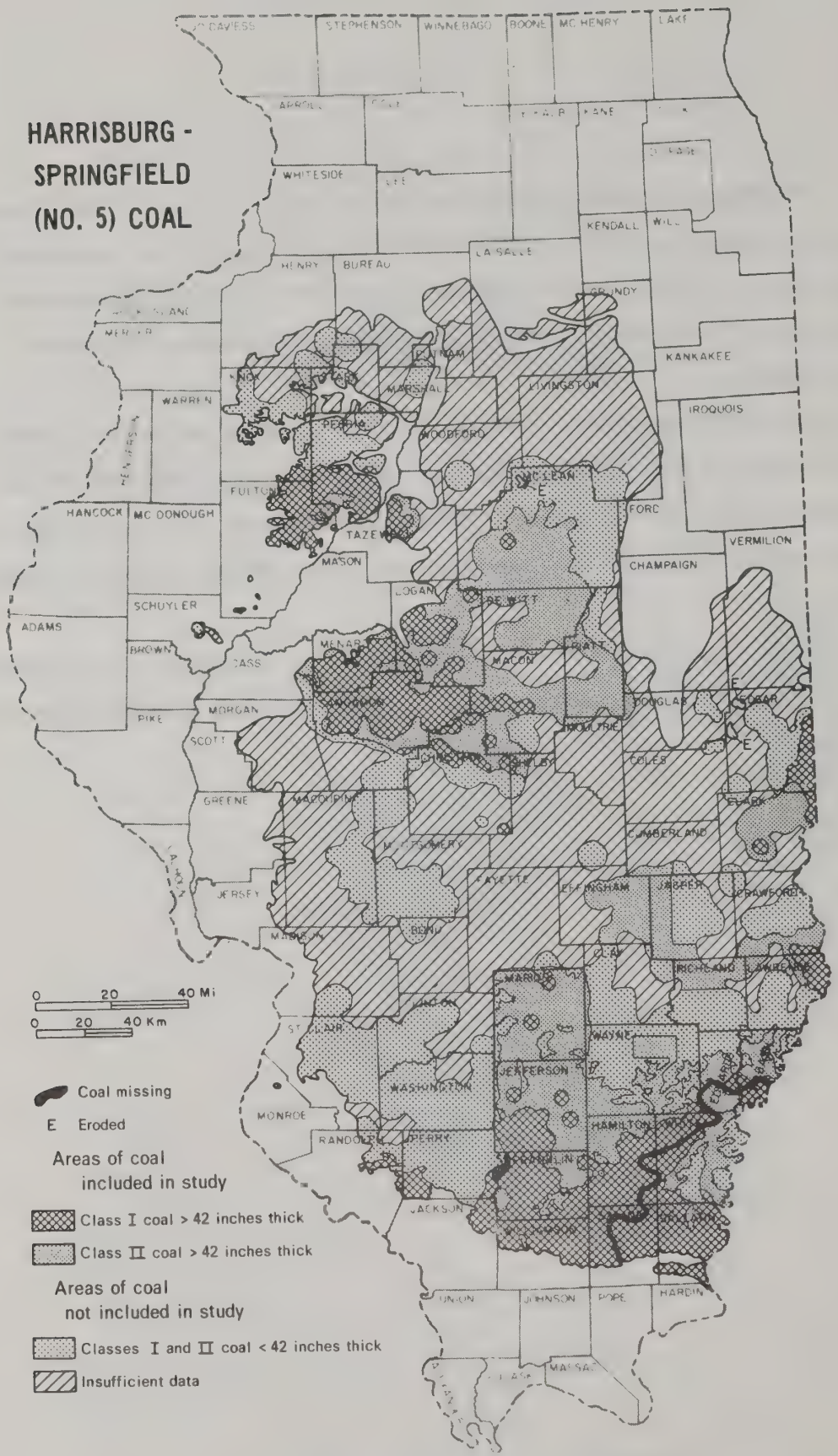
HERRIN (NO. 6) COAL RESERVES

(*Figure 4 from "Coal and Water Resources for Coal Conversion in Illinois," Cooperative Resources Report 4, Illinois State Water Survey and Illinois State Geological Survey, 1975.*)

The Harrisburg-Springfield (No. 5) Coal accounted for 16% of Illinois coal production in 1973. While 9.1% of the Herrin seam has been mined out only 4.5% of the area of original Harrisburg-Springfield reserves has been. Those areas mined out are around Springfield, Harrisburg and Peoria.

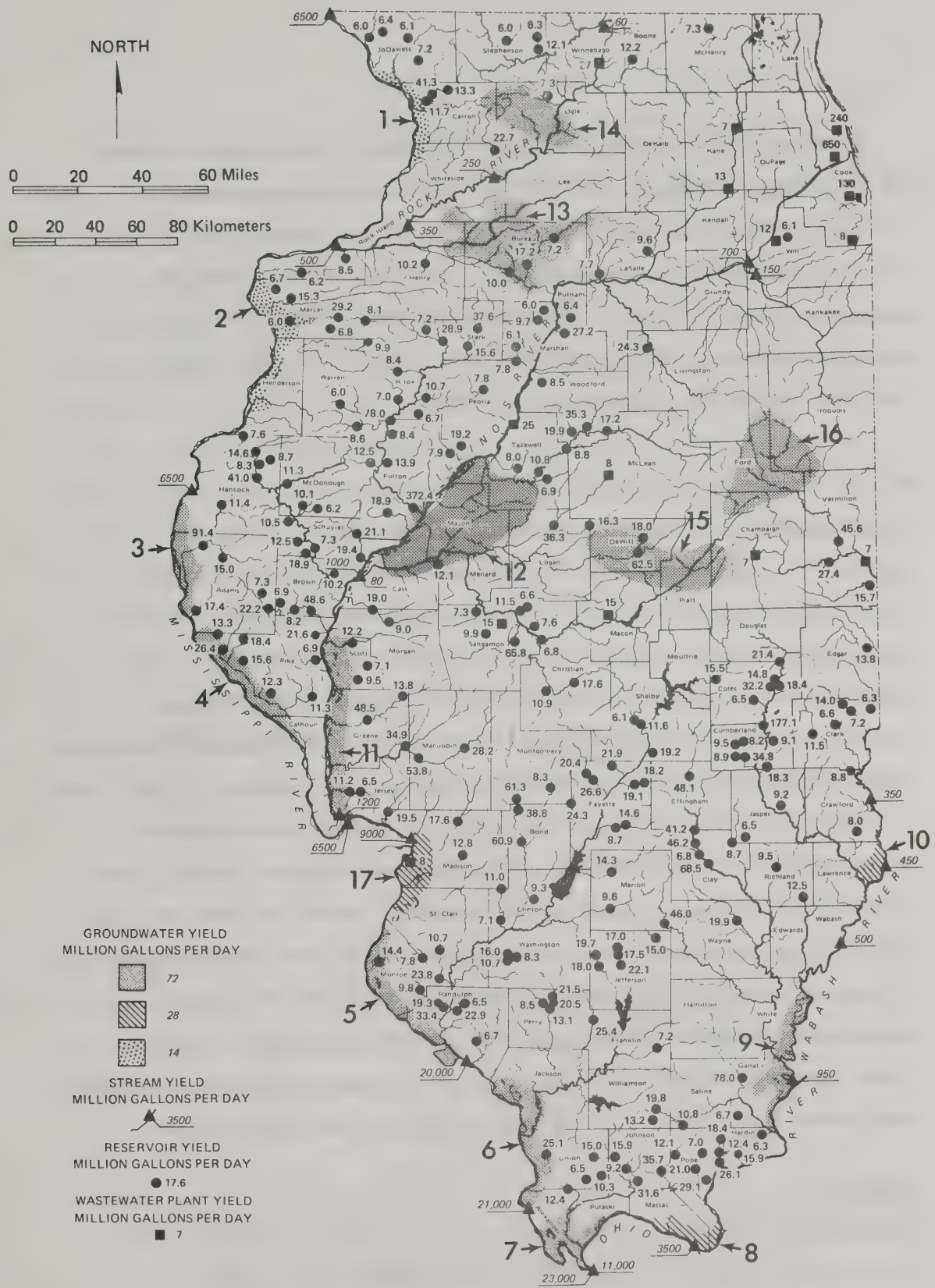
The Harrisburg-Springfield (No. 5) Coal seam has estimated reserves of 38 billion tons 42 or more inches thick. It has a weighted average thickness of 4.55 feet which is about 1 foot thinner than Herrin (No. 6) Coal averaging 5.52 feet. The seam lies 10 to 130 feet below the Herrin seam.

There is an estimated 2,738 million tons of low sulfur coal reserves in the Harrisburg-Springfield (No. 5) seam. They are located in southeastern Illinois.



HARRISBURG-SPRINGFIELD (NO. 5) COAL RESERVES

(*Figure 5 from "Coal and Water Resources for Coal Conversion in Illinois," Cooperative Resources Report 4, Illinois State Water Survey and Illinois State Geological Survey, 1975.*)



WATER AVAILABLE FOR COAL CONVERSION

(Figure 25 from "Coal and Water Resources for Coal Conversion in Illinois," Cooperative Resources Report 4, Illinois State Water Survey and Illinois State Geological Survey, 1975.)

Illinois coal has become very important during the recent experience the nation has faced regarding energy. Coal conversion is being looked into as one means of providing energy at the present until alternative energies are developed that will produce the quantities needed at economical prices. But another resource vital to coal conversion is water. Water needs for coal conversion plants range from 6 to 72 million gallons per day (MGD).

Illinois is fortunate in having a great source of water from which to draw upon. Water could be supplied to a plant anywhere along the major rivers - the Mississippi, Ohio, Wabash, Illinois or Rock. The minimum flow in the Mississippi River, as shown on the accompanying map (pl.3), could supply numerous coal conversion plants, each using water at a rate of 72 mgd. At 228 locations (pl3) at least 6 mgd could be supplied to a coal conversion plant from a man-made reservoir. At 17 locations a system of wells could be constructed to provide a water supply of at least 14 mgd for coal conversion.

Annual rainfall in Illinois will range between 32 and 46 inches and the annual runoff to streams will run between 8 to 15 inches. 2,000 billion gallons of water vapor passes across the state each day and leaves 99 billion gallons of rainfall per day. The total runoff from streams in Illinois is 23 bgd and when the dependable flows of the Mississippi and Ohio Rivers are added, a total supply of 53 bgd is available. This is a vast amount of water - more than 3 times the amount now used in Illinois and a sixth of the water used for all purposes in the United States.

References

Illinois State Geological Survey, John C. Frye, Chief; Illinois Minerals Note 53, Coal Resources of Illinois, M.E. Hopkins and J.A. Simon

Illinois State Water Survey and Illinois State Geological Survey Coal and Water Resources for Coal Conversion in Illinois, William H. Smith and John B. Stall

With the present energy shortage facing this country, the fuel that represents the nations best hope for maintaining adequate supplies of energy to serve our needs is through the development of coal. This puts Illinois in an enviable position since it has the largest reserves of bituminous coal in any state, and is surpassed in total reserves only by North Dakota and Montana which have large quantities of lower rank lignite and subituminous coals. Illinois compares very favorably with all other states having bituminous coal reserves because of its generally thicker, more continuous, and relatively flat-lying seams.

The latest estimate by the Illinois State Geological Survey regarding the reserves of coal in the ground is 161.6 billion tons. About 14 percent of this coal is found in seams lying less than 150 feet deep, making it economically strippable. The remaining coal reserves lie between 150 and 1500 feet deep. The deepest part of the Illinois Coal Basin lies in Cumberland, Jasper, Richland, Clay, and Wayne Counties, with the coal seam lying closer to the surface as you move away from these counties.

Illinois coals are all of high-volatile bituminous rank. Natural moisture contents range from about 20 percent in the northwest to about 5 percent in the southeast. Heating value of Illinois coal varies from about 9,700 to more than 12,700 Btu per pound. Ash content of coal being mined ranges from 5 to 15 percent. Total sulfur in Illinois coal has been reported to vary between .5 and 6 percent, with occasional exceptions having higher sulfur contents.

POTENTIAL AREAS OF INTEREST FOR DEVELOPMENT OF ILLINOIS COAL RESOURCES

A. CHEMICAL METHODS OF COAL SULFUR SEPARATION

1. Battelle Hydrothermal Coal Process

This process involves heating an aqueous slurry of coal and a chemical leachant (NaOH or $Ca(OH)_2$) at moderate temperatures and pressures to selectively extract the sulfur and some of the ash from coal. Laboratory scale results for the process have been very encouraging with raw coals containing a sulfur equivalent of 2.2 to 4.6 lbs sulfur dioxide per million Btu producing a reduced sulfur fuel equivalent to 0.8 to 1.2 lbs sulfur dioxide per million Btu. All of the pyritic and up to 70% the organic sulfur is removed.

2. TRW Systems and Energy Process

TRW, Inc. is pursuing research on the use of ferric sulfate as a chemical oxidizing agent to remove pyritic sulfur from coal. Laboratory results have been encouraging although the economics of the process do not appear favorable.

B. PHYSICAL METHODS OF COAL SULFUR SEPARATION

1. U.S. Steel Processes

The U.S. Steel Research Laboratory is pursuing work on the physical separation of sulfur from coal by the use of hydraulic concentrating tables, hydroclones and heavy fluid medium units.

2. Coal Pyrite Flotation Process

The U.S. Bureau of Mines is also investigating a selective flocculation process which may serve to reduce sulfur and

ash contents of high sulfur coal and increase the suitability of the product for use in other coal utilization technologies such as liquefaction.

C. SOLVENT REFINED COAL

1. Pilot Plant

In this process, pulverized coal is mixed with a heavy aromatic solvent (derived from coal) and then passed through a reactor under a hydrogen atmosphere at approximately 100 psi and 800°F. A 50 ton/day pilot plant in Tacoma, Washington has achieved a 60% availability in the first half of 1975 while producing a 16,000 Btu/lg and 0.6% sulfur product from a 3.5% sulfur feedstock.

D. FLUIDIZED BED COMBUSTION

1. Sorbent Regeneration Processes

Suitable methods for recycle of spent sulfur dioxide capture material have not been developed. Research efforts have centered on the use of a separate section within the fluidized bed operating at higher temperature and with reduced oxygen concentration.

2. Increased Steam Temperatures for Power Generation

The possibility exists of utilizing the high heat transfer, heat release, and even heat flux properties of immersed superheater tubes in a fluidized bed to increase steam temperatures above the current maximum of 1000 to 1100°F. The overall cycle efficiency of a utility generating station is in part a function of the turbine steam inlet temperature. Existing turbine technology requires improvement, however, to accommodate the higher temperature. With the steady increase in all fuel costs, the possibility for an increase in overall turbine cycle efficiency for coal firing would result in a competitive advantage for coal utilization.

E. COAL LIQUEFACTION

1. Coal Properties

Liquefaction processes have suffered from highly variable yields depending on the feedstock of the coal. Research is now being conducted to define the liquefaction properties of coal based upon certain petrographic constituents.

F. COAL GASIFICATION

1. Low Btu Power Generation

Coal gasification processes producing a low Btu product gas appear suitable for use in electric power generation.

2. Methanation Catalyst

The only step in the production of high Btu synthetic natural gas which has not been demonstrated on a commercial scale is the methanation reaction. The efficiency of the catalyst used to increase the methane yield has suffered due to poisoning with residual sulfur compounds, overheating, and carbon deposition.

3. Coal Feed

Most coal gasification processes operate at elevated pressure and problems have been encountered with lock hopper and coal slurry feeding systems. Research is being conducted with dry piston-type feeders.

4. Gas Clean-Up

Commercial purification systems available for the removal of the main sulfur contaminant, hydrogen sulfide (H_2S), produced by coal gasification systems are only capable of operation at low temperatures. H_2S removal at high temperatures would offer significant process economies.

G. PRODUCTION OF PETROCHEMICALS FROM COAL

1. Petrochemical Products

It is anticipated that increased research efforts toward the production of petrochemical products from coal will occur in the future to augment rapidly dwindling petroleum based feedstocks.

H. FLUE GAS DESULFURIZATION SYSTEMS (SCRUBBERS)

1. Advanced Second Generation Systems

Flue gas desulfurization systems producing a saleable by-product from gaseous sulfur dioxide removal such as elemental sulfur, liquid sulfur dioxide, and sulfuric acid without the generation of waste sludge, are approaching the full-scale development stage. Financial assistance to Utilities may be necessary to promote the initial investment in a full scale system of this nature.

2. Unsaturated Mode of Operation

Recent developments in process chemistry offer the potential to reduce scaling and fouling within first generation lime and limestone flue gas desulfurization systems. The mechanism of the operation of a scrubber system in an unsaturated mode with respect to sulfate has not been fully identified.

3. Waste Scrubber Sludge Utilization

Processes for the stabilization of waste scrubber sludge are under development. Research efforts should be directed to finding suitable markets for the byproduct materials produced from these processes.

I. SUPPLEMENTARY CONTROL SYSTEMS

1. Sulfate Studies

Supplementary control systems would permit the continued

use of high sulfur coal. Plant load would be reduced under unfavorable meteorological conditions to maintain sulfur dioxide ambient air quality standards. Uncertainties regarding the potential health effects of sulfates produced from the emission of sulfur dioxide have limited the utilization of supplementary control systems even though little research has been conducted on this problem.

J. COAL SLURRY PIPELINES

1. Coal Transport

Coal slurry pipelines offer the potential for reduced cost of transport of Illinois coal.

K. UNDERGROUND COAL GASIFICATION

1. Gasification of Deep Seam Coal

The U.S. Bureau of Mines has recently completed tests on underground (in-situ) gasification of subbituminous coal at a site near Hanna, Wyoming. The tests indicate that although wide fluctuations in volume of gas and heating value occurred, during one six month period a semi-steady state condition was achieved with production of 130 Btu/SCF gas at a rate of 1.6 million SCF/day. The depth of the seam gasified was 400 ft. It is anticipated that greater process economies can be obtained by gasification of seams at depths approaching 1000 ft. although this has not been demonstrated.

L. STRIP MINING

1. Environmental Effects

The increased strip mining of Illinois Coal will create significant land reclamation problems. Many environmental improvements have been gained through recently enacted

legislation which requires the leveling of strip mined land and the return of a layer of the original top soil. Improvements have also been seen in the planting of grasses, grains, and Crown Vetch ground cover instead of the usual reclamation technique of planting trees. Additional research in these important areas would help to prevent surface erosion, and water pollution resulting from strip mining.

M. PARTICULATE REMOVAL

1. Baghouses

The emission of small (submicron) particles of ash resulting from the combustion of coal is receiving increasing attention from health officials and from the Environmental Protection Agency. The most common means of particulate control in large central generating stations and many industrial applications, is the electrostatic precipitator. Although capable of achieving overall particulate removal efficiencies in excess of 99%, the electrostatic precipitator is less efficient when collecting submicron particles. If regulations are adopted which regulate particulate emission on a varying mass basis with respect to particulate size, the demand for use of coal might be reduced because of the difficulty in achieving compliance. The use of baghouses, which are capable of removing submicron sized particles, could solve this problem. A baghouse is made up of fabric filters which separate particulate matter from a passing gas stream. The fabric is made into bags of a tubular or envelope shape. Overall efficiency can approach 99.9%. Although used extensively in industrial installations their application in other areas, particularly electric power generation, is very new. Many research problems must be pursued for further application of this technology including determination of bag life and development of suitable bag filter material for operation under various conditions.

N. COMBINED CYCLE

1. Coal-Fired Combined Cycle

Combined cycle power plants combine a gas turbine with a conventional steam turbine. Most combined cycle power plants utilize a liquid or gaseous fuel to fire the gas turbine. Coal-fired combined cycle applications have been limited due to the sensitivity of gas turbine components to ash and sulfur dioxide concentrations in the gas stream. Pressurized fluidized bed combustion and coal gasification could be utilized to permit the use of coal in combined cycle applications. A 170 MW coal gasification combined cycle power plant is being constructed in West Germany. The combined cycle is more efficient in converting the Btu content of the fuel into useable electricity than a conventional steam cycle. Coal-fired combined cycles could result in increased coal utilization by improving the competitive advantage of coal in power generation.

O. MISCELLANEOUS RESEARCH AND DEVELOPMENT

1. Mathematical Dispersion Modeling Techniques

Mathematical dispersion modeling techniques are used to predict the concentration of various gaseous species, such as sulfur dioxide, in the vicinity of a coal burning installation. The development of more accurate techniques would promote the utilization of coal resources by assuring compliance with ambient air quality standards and protection of the environment before plant operation.

2. Environmental Effects of Air Pollutants

Research into the environmental effects of air pollutants emitted from the use of coal including emission of trace metals, and control techniques for reduction of nitrogen oxides would also help promote the use of coal by dispelling concern for the emission of these pollutants.

ILLINOIS IS WINNING SITE FOR COALCON'S WINNING TECHNIQUE OF CONVERTING COAL TO LIQUIDS AND GASES

The first large-scale plant to convert coal to more desirable energy forms will be built on a 2,000 acre site in New Athens, Illinois.

Coalcon, which was established in May of 1974, designs, engineers and constructs plants for the conversion of coal to liquid and gaseous fuels and chemical feedstocks. The company is a joint venture of Union Carbide Corporation and Chemical Construction Corporation (Chemico). Coalcon directs its efforts toward helping to reduce the widening gap between the need for energy and the country's capacity to provide it.

The Illinois site, near Belleville, on the Kaskaskia River, was selected by the Energy Research & Development Administration (ERDA) from a list of 16 sites recommended by the governors of six Eastern coal producing states. In announcing the selection, Dr. Robert C. Seamans, Jr., Administrator of ERDA, said, "Illinois' site was the clear-cut winner under the criteria that had been established. After reviewing all the information on the sites, I believe this site provides the best balance between project needs and acceptable environmental and socio-economic impact."

Among the criteria used in evaluating the sites were availability of coal, water, electric power, land, labor force and transportation, and acceptable socio-economic and environmental impact.

Coalcon was awarded the $237.2 million contract last January for the proposed demonstration plant. It was the largest single contract ever awarded by the Department of the Interior and called a milestone in the Nation's accelerated program to hasten commercialization of coal conversion technology.

Stanley Noss, President of Coalcon, cited the project as the "most significant step yet taken by the federal government to make the energy potential of coal available in a clean, useable form on a

commercially practical scale." He maintains that the industry in the 1980's could be in the tens of billions of dollars with each plant thereafter costing about $1 million. In time, Noss believes that coal gasification could lead to 100 new plants and cut oil imports by 5 to 10 percent.

Construction of the demonstration plant is expected to begin in 1977 and to be completed in 1980. Coalcon will operate the plant for 42 months to evaluate the efficiency of the design and marketability of the plant's products.

The plant is expected to use 2,600 tons of high sulfur coal per day, producing 3,900 barrels a day of liquid fuels for use in boilers and 22 million cubic feet of synthetic natural gas. The first-of-its kind project is to be conducted in four distinct phases over an eight year period.

The clean liquid and gaseous fuels produced by the demonstration plant would be sufficient to power a 200 megawatt electric generating station, at a cost competitive with projected prices for fuels produced from petroleum.

About 1,000 persons will be employed for building the plant and about 400 for operating it. If successful, the plant may then be expanded into a full-size commercial plant converting 14,000 to 20,000 tons per day of coal and producing enough clean energy to power a 1,000 megawatt electric generating system.

The plant will use a process called hydrocarbonization which promises higher conversion efficiencies and thus lower costs than current technologies. In the process, pulverized coal is heated and reacted with hydrogen to produce liquid and gaseous fuels. The process is the culmination of Union Carbide's activities over a 30 year period in coal liquefaction and hydrogenation which were demonstrated in a 300-ton-per-day semi-works plant and a 25-ton-per-day pilot unit. Chemico adds to this a background 60 years' experience in design, engineering and construction of large-scale

commercial processing facilities throughout the world.

The project is to be funded jointly by ERDA and a Consortium of industry and state agencies formed by Coalcon.

GENERAL FOODS CONSORTIUM

The Energy Research Development Administration desires to develop the fluidized-bed combustion concept for demonstration in the industrial sector and identified four categories of application, i.e., industrial steam generator, industrial boiler, indirect fired heater and direct fired heater. This proposal addresses itself to Category II - Industrial Boilers. The scope of this proposal includes the development, engineering, design, construction, operation and testing of a fluidized-bed combustion steam generating system rated at 100,000 pounds per hour at 150 psig. The system would be installed at the General Foods Coporation food manufacturing plant in Kankakee, Illinois. The installation and test program are designed to demonstrate that a fluidized-bed combustion steam generator:

a) Can burn high sulfur coal with acceptable emission levels.

b) Will have a thermal efficiency and operating cost in line with convential coal-fired equipment

c) Can be designed and manufactured as a shop erected package.

d) Can be commercially produced by convential steam generator Manufacturers with existing manufacturing methods and equipment.

e) Will have the ability to handle large load swings.

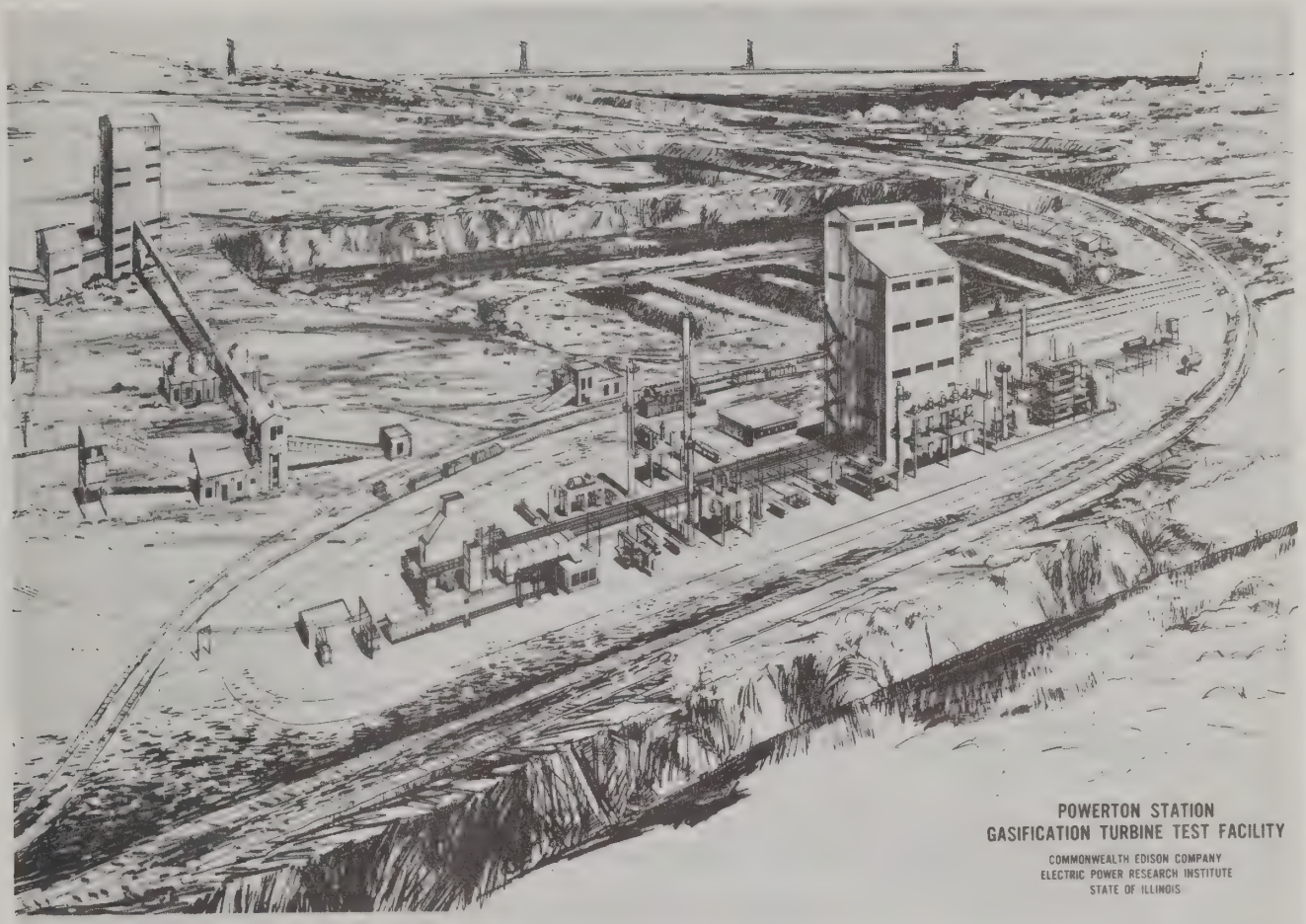
The proposing team consists of an industrial user, General Foods Corporation; a boiler manufacturer, Erie City Energy Division of Zurn Industries; and a consulting engineering and design company, Burns and Roe Industrial Services Corporation.

GENERAL ELECTRIC PRESSURIZED FLUIDIZED BED PILOT PLANT PROJECT

The allocation of $10 million of Coal Development Bond money for the General Electric (G.E.) Pressurized Fluidized BED Pilot Plant Project was approved by the IERC on contention that the Energy Research and Development Administration (ERDA) select the G.E. project to be located at Wood River, Illinois. To the IERC's regret, ERDA selected the smaller Curtis-Wright Company Project at Wood-Ridge, New Jersey to receive funding. Much time and effort was spent by the IERC and the Department of Business and Economic Development to get this project for Illinois; but, since Illinois tries to have projects meeting every federal request for proposal, it can't win them all. By Illinois receiving the $273 million Coalcon Project it received $150 million funding from the ERDA.

The G.E. project was to develop, construct and operate a 60 megawatt combined cycle pressurized fluidized bed boiler at Illinois Power's Wood River plant site. The Curtiss-Wright project will be capable of generating 13 megawatts. In a decision paper on the selection, signed December 19, 1975, ERDA Administrator Robert C. Seamans concluded that, "Curtiss-Wright offers a slight advantage in its more flexible and somewhat less complex technical approach, as well as significant cost saving and greater compliance with the business and management aspects of the program." The total G.E. project would cost about $100 million and the Curtis-Wright Project will cost about $25 million.

The G.E. Project used a boiler which if successful would only have to be copied to yield a commercial unit. The Curtis-Wright Project is less risky but takes longer to develop a commercial size unit. It will have to be followed up by a larger project the size of the G.E. pilot plant. This may set the technological progress of pressurized fluidized bed boilers back for the Curtis-Wright pilot plant will not be completed until about 1980.



COMMONWEALTH EDISON COMPANY
EDISON'S POWERTON STATION
PEKIN, ILL.

GASIFICATION TURBINE TEST FACILITY

It is becoming increasingly clear that this country's proven coal reserves of more than 400 billion tons will have to be fully utilized to achieve and maintain national energy self-sufficiency in the decades and centuries to come. Technology pointed toward overcoming the adverse environmental effects of mining and consuming coal must be investigated and developed as rapidly as possible.

Although the State of Illinois leads the nation in bituminous coal reserves, estimated in excess of 140 billion tons, the bulk of this coal is presently unusable in the industrial and power plant markets. The Illinois State Geological Survey recently noted: "Even the more lenient standards for existing plants in non-metropolitan areas would eliminate a large part of the coal currently being mined in the Midwest region. If 3% is assumed to be the maximum sulfur allowable, 81% of the coal reserves in Illinois would be disqualified."

Recognizing the urgency for developing coal gasification technology, Commonwealth Edison Company, the State of Illinois, the Electric Power Research Institute, Fluor Engineers and Constructors, and Lurgi Mineraloeltechnik have joined in proposing the construction of a gasification turbine test facility at Edison's Powerton Station, near Pekin, Illinois. This experimental plant will use components that have already been tested and proven commercially, and will produce a low Btu gas from Illinois high sulfur caking coals, removing the sulfur compounds and particulate matter and burning the resultant gas in a gas turbine for power generation.

The primary objectives of this project are:

1. To determine the potential value and environmental acceptability of an integrated low Btu coal gasification-combined cycle generation system, and to provide a data- and experience-base for government

and industry to apply this concept commercially in other locations.

2. To certify the characteristics and capabilities of this concept, using United States coals, to determine the long-range operability, reliability, maintainability and economy of the process.

The facility will cost approximately $68 million to build. The operation of the three-year test program will cost an additional $37 million, for a total of $105 million. Construction is scheduled to begin in the last half of 1976, with completion expected early in 1978. The industrial participants have indicated support in excess of $42 million for one-third of the total program cost. The federal government's portion of the support to complete the project will be the remaining two-thirds of the program cost. The gasification turbine test facility will be managed by Commonwealth Edison Company and the participants will have an opportunity to review the feasibility of the project at appropriate check-points.

UTILITIES OFFER JOINT PROPOSAL FOR COAL GASIFICATION PROJECT

Five major Illinois utility companies have submitted a joint plan to the Energy Research and Development Administration (ERDA) for the design, construction and operation of a coal gasification demonstration plant in the State of Illinois.

Utilities participating in the plan are Central Illinois Light Company, Peoria; Central Illinois Public Service Company, Springfield; Northern Illinois Gas Company, Aurora; North Shore Gas Company, Waukegan; and The Peoples Gas Light and Coke Company, Chicago. These companies serve 946 communities in Illinois with about 86 percent of the state's total population. The non-profit Coal Gasification Group was formed at the direction of the Illinois Commerce Commission in 1971.

The demonstration plant would be capable of converting the state's various coal deposits into a pipeline-quality synthetic fuel, similar to and completely interchangeable with natural gas.

The decision to participate in the ERDA program caps nearly four years of research and planning work by the five Illinois companies. This statewide cooperative effort is the first joint effort by utilities to develop plans for utilizing Illinois' large deposits of coal.

A team of design, process and construction engineers, and financial specialists from member companies drafted the proposal for submission to ERDA. This team is being directed by Robert J. Eby, assistant vice president of Northern Illinois Gas Company and Willis C. Holder, assistant vice president of The Peoples Gas Light and Coke Company.

The proposal on the Illinois project was submitted to ERDA in two stages: the first, January 21, 1976, covered the technical phase of the

plan, including data on plant siting and the gasification process selected for the demonstration plant. The second portion, February 4, contained cost and price data, construction scheduling and project management plans.

ERDA will evaluate the Illinois proposal along with other competitive applications to determine their merits; then select the project, or projects, to receive federal support. If Illinois is successful, the Coal Gasification Group will seek state involvement through the Illinois Energy Resources Commission. This selection is expected between June and September, 1976.

Under ERDA's timetable, work on the selected project would be done in three phases over an eight-year period. The first phase, extending over 20 months, would involve conceptual development and engineering design. The second part covers plant construction over the succeeding 34 months. The third portion deals with plant operation, testing and evaluation for the remaining 42 months.

COGAS

The COGAS Process converts coal to gaseous and oil products by a combination of fluidized-bed pyrolysis and the steam gasification of char from pyrolysis. The integral pyrolysis and gasification steps are conducted in a low-pressure system without the need for an oxygen plant. To develop the process, a joint-venture partnership, known as the COGAS Development Company (CDC) was formed in July, 1972.

Under wholly private funding to date, substantial progress has been made. The COGAS gasification-combustion step has been piloted successfully in a plant processing 50 tons of char per day. The projected economics for the COGAS Process are more attractive than those reported for existing technology, and are expected to be superior to the economics for any of the "second-generation" processes.

To continue advancing the development of the COGAS Process, CDC developed a five-year program which includes:

1. The design, construction, and operation of a large-scale pilot plant (600 tons of coal per day).
2. The continued operation of the 50 tons per day pilot plant.
3. The continuing of supportive cold-model and laboratory studies.
4. The continuing of process engineering and economic studies.

This five-year program has been estimated at $63.5 million. CDC is soliciting financial support from the Energy Research and Development Administration of the U.S. Government for this five-year program.

COGAS submitted their proposal to ERDA on September 26, 1975 and also requested State financial participation. After review of the COGAS proposal, the Division of Energy, Department of Business and Economic Development recommended to the Illinois ERC that a maximum sum of $6.0 million be allocated as the State's share of this $63,500,000 project.

There are five Illinois sites being considered by the COGAS Group. One prime site has been identified and it is being investigated.

THE COAL EXTRACTION AND UTILIZATION RESEARCH CENTER
SOUTHERN ILLINOIS UNIVERSITY AT CARBONDALE

Southern Illinois University at Carbondale has been designated by the Illinois Board of Higher Education as the Coal Extraction and Utilization Research Center for the State. Both geography and geology favor this location as nearby mining operations, coal burning power plants, and the availability of large water supplies distinctly enhance the University's capability. The largest known bituminous coal reserves in the United States, much of which occur in Illinois, is in proximity to the University. Further indication of the desirability of this location is the recent decision to locate a demonstration coal conversion facility within 70 miles of Carbondale.

Conceptually, organizationally, and practically the Coal Extraction and Utilization Research Center (CEURC) has been designed to productively interact with the academic community, state and Federal agencies, industry, labor, and representatives of the public in developing new methods of extracting and utilizing coal within appropriate environmental constraints.

The Center will foster basic and applied research in the extraction and utilization of coal within the framework of contemporary environmental problems. Contributions will be made in the support of faculty proposed programs reflecting an interest in and the expertise to carry out appropriate research and training. Aid will be provided investigators who wish to pursue external funding for research and training proposals. Promotional and liaison services will be provided among disciplines in the interest of inter-disciplinary research and problem-solving activities. In its early stages, the Center will work with degree granting units in developing instructional programs in mining engineering and mining technology, and in coordinating and expanding programs in reclamation and environmental studies, and programs

related to the economic, sociological, and ecological balance as modified by extensive coal extraction.

Southern Illinois University at Carbondale has a long history of interest in coal, and the technical, environmental, economical, and sociological impact of the development of the coal resource. The University has planned programs as part of or supportive to the Coal Extraction and Utilization Research Center which include the M.S. in Mining Engineering and the B.S. specialization in Mining Technology, the Coal Research Laboratories of the Geology Department and the Catalysis Chemistry group in the Chemistry Department. A brief resume by major program area indicates the magnitude of professional expertise. It is noteworthy that the majority of the programs cross both departmental and college boundaries.

Physical Sciences

Graduate and undergraduate courses, and research programs in basic coal geology, geochemistry, geophysics, coal characterization and molecular structural studies, mine stability, mine drainage, ground water management and quality, coal genesis, coal extraction, catalysis, liquefaction and gasification.

Engineering and Technology

Accredited baccalaureate programs in engineering and in engineering technology; baccalaureate program in industrial technology (with one emphasis on mining problems and materials handling); master's degree program in engineering with courses and research in such areas in sulfur and particulate removal, acid mine drainage, coal gasification, power distribution, earthquake studies, and shaft contour optimization.

Technical Careers

Programs in Operational Reclamation with emphasis on surface-mined areas and mine technology.

Agricultural Sciences

Graduate and undergraduate degree programs in agriculture with an emphasis on environmental problems and land use and reclamation; research in identification of crops adapted to mined areas, reclamation of mines areas for pasture land, erosion control, watershed management, the soil science or pre- and post-mining operations, reforestation, and the impact of coal mining on rural living.

Biological Sciences

Graduate and undergraduate courses, and a full spectrum of research programs in botany and zoology. Especially noteworthy are the Wildlife Research Laboratory and the Fisheries Research Laboratory, both of which have long-standing environmental programs in coal-related research. Programs include revegetation as related to wildlife, strip mine water quality as related to fish production, toxicological studies, physical and chemical characteristics of acid mine waters as related to flora and fauna, reclamation practices, and the ecology of surface-mined lands.

Social Sciences

Graduate and undergraduate courses, and research programs dealing with the social and environmental impact of the development of coal as our energy source; programs in archeology related to pre- and post-mined areas, the economics of coal extraction and utilization, the political aspects of energy and conservation, and the history and sociology of coal mining.

CARBONDALE MINING RESEARCH CENTER

The Bureau of Mines received an appropriation of $1.5 million in Fiscal Year 1976 (and $375,000 in the transition quarter) for the establishment of a new mining research center at Carbondale, Illinois. This mining research center will be the fifth to be operated by the Bureau -- the other four being located at Denver, Colo., Pittsburgh, Pa., Spokane, Wash., and Minneapolis, Minn.

Mining research is one of three principal functions of the Bureau of Mines. The other main activities encompass the gathering dissemination and analysis of information pertaining to all minerals commodities and a substantial effort in Metallurgical research.

Over the years, new and improved technology emerging from Bureau of Mines research has made mining a safer, more healthful occupation and has helped private enterprise achieve competitive extraction of vital minerals and fuels from deposits of increasingly lower grade. It has helped to reduce, or to remedy, the environmental problems associated with mining. Today, in a world where competition for essential but limited resources is constantly growing, the challenge to Bureau mining research is bigger, and the contribution it can make more important, than ever before.

The creation of the Carbondale Mining Research Center will provide an additional opportunity for the Bureau to work closely with the mining industry and with the mining-oriented faculty of Southern Illinois University, also at Carbondale. A significant amount of work already is underway in Illinois, being guided by Bureau personnel at the other four centers. The main advantages of geographical proximity to this major coal producing region will accrue from reduced necessity for travel to field sites, more frequent interaction with industry representatives and more convenient transfer of technology to mining

operations. The southern Illinois area is one of the main coal producing sections of our country. Within a radius of about 80 miles, approximately 30 surface and underground coal mines are located in Illinois alone. The interaction which is anticipated to occur with this major industrial region will provide benefits to both the immediate community and the nation.

The Carbondale Center will function in a manner similar to the Bureau's other centers. All of these have a national perspective in that they work on problems concerning health, safety, productivity, resource conservation and protection of the environment as they relate to coal, metal, and nonmetal mining. Each problem also has a regional aspect, deriving from the characteristics of this immediate geographical area. The principal focus for the Carbondale Center will, of course, be on coal mining for two significant reasons. The first is that the principal mining in this area is coal. The second is that the current major emphasis in the Bureau's mining research program is on coal mining because of the national priority it has received and the resulting availability of funds for research.

It is expected that the Carbondale Center will achieve the same prominent "center of excellence" status as the Bureau's other centers. This will not, of course, occur overnight. It will require a concentrated effort to provide the facilities and staffing essential to a viable program. Since no additional positions were authorized for the staffing of this new operation, it will be necessary to transfer functions and personnel from existing Bureau centers.

Staffing at other Bureau research centers currently ranges from 90 to 300 people. Employment at the Carbondale Center is expected to fall within that range. We are confident that the work of this Center will benefit markedly by the close association with the coal industry and university community and we look forward to a challenging and productive future for this new Bureau installation.

ENERGY RESOURCE MANAGEMENT AT EASTERN ILLINOIS UNIVERSITY

The Energy Resource Management Program at Eastern Illinois University is conceived as a regional center of excellence for interdisciplinary training and applied research in energy resource management. The Energy Resource Management Program recognizes four major goals as a focus for its activities. They are:

* To assure the optimum development and utilization of the region's energy resources consistent with sound principles of environmental management.

* To maintain a healthy regional economy by:

  -- improving opportunities for successful commercialization of energy technology; and,

  -- creating additional employment opportunities in the energy sector.

* To advance the knowledge of energy policy development and resource management so that the future standard of living will not be jeopardized by a lack of energy supply.

* To encourage all levels of government and the private sector to utilize their authorities, resources and leadership capabilities in cooperative efforts to develop effective and equitable energy policies for the American people.

THE ACADEMIC PROGRAM:

Both undergraduate and advanced degrees are available. The degree requirements are flexible to meet the particular career interests of students and to utilize the combined resources of the various departments of the university. Each student plans an individualized program in cooperation with an advisor and the Director of the Energy Management Program to assure that:

* The curriculum is interdisciplinary in concept.

* It is designed for application in a recognized field of Energy Resource Management.

* Technical skills valuable for entry level employment in the energy sector will have been developed.

* He will have developed leadership and management skills appropriate for progressively responsible administrative and executive assignments in his chosen professional field.

THE ENERGY RESOURCES CENTER

In September 1973 the University Board of Trustees approved the establishment of the Energy Resources Center at the University of Illinois at Chicago Circle for the purpose of studying and offering advice on the overall energy programs in the State of Illinois. The Center is an all-campus unit designed to stimulate, facilitate, and promote the development of research and academic programs in energy within the existing colleges and departments of the University of Illinois at Chicago Circle. The Center also serves as a liaison between various departments in carrying out energy programs and research requiring an interdisciplinary approach.

An internal advisory committee of ten members drawn from three or more of the colleges at Chicago Circle and from the University of Illinois Medical Center provides counsel and assists the Director in preparing the detailed program of the Center. In addition, an external advisory committee, composed of representatives from various energy industries, reviews the programs and assists in evaluating the performance of the Center.

One of the activities of the Center is to conduct conferences and workshops in the field of energy. For example, some of these include the First Annual Illinois Energy Conference on "Energy Problems in Illinois" the Second Annual Illinois Energy Conference on "Energy Conservation Policy Options for Illinois", co-sponsored by the National Science Foundation; Energy Management Workshops, co-sponsored by the Chicago Association of Commerce and Industry, Federal Energy Administration, City of Chicago Department of Environmental Control, Clean Air Coordinating Committee, and the Chicago Lung Association; "Energy Conservation Workshop", co-sponsored with the League of Women Voters of Illinois; and a conference-workshop on "Energy Conservation Procedures for Municipalities and Public Institutions", co-sponsored with the Federal Energy Administration - Region V.

The Center was responsible for the organization of the Inter-University Energy Organization Committee by hosting two meetings of representatives

from all state-supported institutions of higher education, several private institutions as well as state agencies involved in energy. The purpose of the Inter-University Committee is to obtain an inventory of energy research and energy talent within these institutions and to develop a statewide cooperative approach to research and education in the field of energy.

In addition to distributing proceedings of the annual Illinois energy conferences, the Center publishes and distributes the bimonthly Illinois Energy Newsletter which includes discussion of developments and research in the State of Illinois.

Currently, the Center is conducting research on fluidized beds under an initial grant of $127,000 from the National Science Foundation and has been awarded a $20,000 grant from Chicago Model Cities for a technical evaluation of the Chicago Model Cities/CCUO Low Income Housing Winterization Program. In addition, the Center is conducting studies on socio-economic problems associated with coal gasification plants and a study on "Improved Energy Efficiency in Industry". Also, the staff of the Illinois Board of Higher Education in its Master Plan for Environmental/Energy Education recommended that the Energy Resources Center take on an added role as a statewide Center for the Efficient Use of Energy.

In addition to support received from the University of Illinois, the Center has received financial support from several industries in the Chicago area including Amoco Oil Foundation, Commonwealth Edison Company, Northern Illinois Gas Company, Peoples Gas, Light and Coke Company, and Universal Oil Products Foundation.

COUNCIL ON ENERGY ENGINEERING

A sizable research effort is currently in progress in the chemical and engineering aspects of energy research at Northwestern University, amounting currently to more than $3,000,000 in funded research. The research ranges over a broad variety of fields, but is heaviest in the areas of nuclear safety, materials research and geothermal energy extraction. Other important areas involve catalysis, plasma research, wind energy, tertiary oil recovery combustion and energy conservation. In addition, a senior-graduate course in energy engineering has been instituted. Liaison is maintained with federal and state energy agencies in order to keep abreast of current programs.

A number of outstanding speakers are brought to the campus for a colloquim series, chaired by Professor J. T. Waber and J. B. Butt, each academic year. Several fellowships are also granted by the Council on Energy Engineering for energy research each year in addition to graduate traineeships received from the NSF in the areas of coal and environmental research.

ENERGY RESEARCH PROGRAMS AT THE UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

The Office of Energy Research provides a focal point for research and development projects relating to energy at the University of Illinois at Urbana-Champaign. Its director assists staff members in developing cooperative energy research programs, both internal and external to the university; acts as a liaison in matters pertaining to energy with other campuses of the university, other state academic institutions, the state surveys, State of Illinois and federal agencies; and develops lines of communications with state, federal, and private organizations having an interest in energy research.

The University of Illinois at Urbana-Champaign (UIUC) has had a multi-faceted energy research program for a number of years. The major energy related research areas at UIUC include conservation, coal, nuclear energy, solar energy and energy and the environment. Typical research projects in each of these research areas are given below.

Energy conservation will probably have the greatest impact on our energy supply in the next ten years. For this reason, it is imperative that one be able to accurately predict the energy useage in all segments of our state economy. The Center for Advanced Computation ERG group at UIUC has developed an inter-industry energy flow model which enables one to determine the energy cost and the labor costs of products from each of 363 industrial sectors. The application of this model allows for the identification of those processes in which conservation programs will realize the greatest energy savings. Other researchers at UIUC have designed an energy efficient house whose energy heating demand is one-tenth of that for a new conventionally built home. Researchers in the College of Agriculture have pioneered ways in which farmers can reduce their energy demand. Their efforts have led to the design of a more efficient tractor, reduced tillage for corn and soybeans

and the development of hybrids that are resistant to certain pests. Fundamental and applied research on weed control have led to more effective systems for controlling weeds, thus increasing the output of food per unit of energy input.

Illinois is blessed with an abundance of coal. For this reason it is particularly appropriate for the state universities to have ongoing research efforts directed at the increased utilization of coal. A cooperative study is underway in which faculty from several departments are performing an economic and technological analysis of the initiatives and innovations necessary to secure fuel supply independence utilizing coal. Research directed at reducing mine explosions is being carried out in the UIUC combustion laboratory. Other studies are examining the feasibility of transporting coal via pneumatic pipelines as an alternative to unit trains. In the area of coal utilization, studies are underway in the areas of coal gasification, methanation, and the combustion of coal in fluidized beds. Studies attempting to improve the strength of the reactor vessels are underway. Novel coal utilization techniques such as magnetohydrodynamics, electrohydrodynamics and fuel cells are also being studied. Finally, the College of Agriculture is studying ways to return strip mined land to agriculture production as quickly as possible.

Solar energy offers an unlimited supply of energy. A solar collector system has been designed by a UIUC agricultural engineer for use in grain drying. Several farmers in the Champaign-Urbana area are currently using this collector system to dry their grain. Other researchers have developed improved materials for converting sunlight directly into heat and electricity. The largest effort in this area is the bioconversion of municipal wastes and certain selected crops into methane. This research holds promise for reducing two problems: the disposal of municipal wastes and the shortage

of methane in many communities. Because of the severe natural gas shortages predicted for many state communities, this research is particularly relevant. Studies are also underway on wind and geothermal energy supply systems.

Nuclear energy is considered by many to be the energy source of the future. The nuclear engineering research at UIUC is focusing on two major areas: nuclear fusion and reactor safety. In the area of nuclear safety, projects are underway to evaluate and control various kinds of reactor conditions which could result in nuclear accidents. In addition, studies which attempt to find safe ways to dispose of radioactive wastes are being carried out. In the area of fusion systems, studies are underway to examine advanced fuels which might be used in fusion reactors as well as the attendant problems which might prohibit the development of a fusion power system.

In developing any energy delivery system, it is necessary to consider the potential impact of that system on the environment as well as the social-economic impact on the community in which the system resides. Researchers at UIUC are examining the impact of coal conversion plants on the Illinois economy, the development of satellite industries near the conversion site, and the expected shifts in local manpower requirements. They are also examining the effect of these large plants on the social fabric of the host community. Other researchers are developing methods for optimizing the allocation of water resources under conditions of large demands for cooling water for industrial use and for consumptive use of water for coal conversion processes.

CENTER FOR ADVANCED COMPUTATION

The Center for Advanced Computation, a special unit of the Graduate College, University of Illinois at Urbana-Champaign, is an applied research institution supported by state, federal, and contract funds. The Center promotes multidisciplinary research and supports the development and utilization of advanced computer technology which contributes to the solution of important societal problems.

Resources

The computing requirements of the various CAC projects are sufficiently diverse and complex as to make it impractical to employ the use of a single computer. Therefore, in addition to local university resources, the Center relies on the heterogenous resources of the Department of Defenses' Advanced Research Project Agency network (ARPANET).

Access to the ARPANET at the University of Illinois is through facilities at the Center. A mini-HOST system was developed at the Center to allow transparent access to network facilities.

Energy Research Group

CAC is developing, under a recent grant from NSF, a program to evaluate the environmental and economic impacts of energy resource consumption. The program is studying the use of energy in today's goods and services, and seeks lower energy alternatives.

Pattern Information Processing

This effort seeks to explore unprecedented opportunities afforded pattern information processing by the ILLIAC IV parallel computer and the other unique resources of the ARPANET. An ILLIAC IV multispectral image analysis system for digital interpretation of Earth Resource Technology Satellite (ERTS) imagery has been developed.

Distributed Systems Group

This group was organized to conduct research in distributed computational

systems of heterogenous computers. Emphasis is placed on determining the cost, performance and reliability improvements available in a shared resource environment. A major concern of this group is the optimal processing of massive computational jobs and the manipulation of large, geographically distributed data bases.

Information Systems

NARIS (Natural Resource Information System) was developed to give environmental planners easy and rapid access to a wide range of information on natural resources, in the eight counties representing the Chicago metropolitan area.

CAC is working with the Department of Agricultural Economics to develop a data collating and retrieval system for the ISEIRD (Illinois Social and Economic Indicators for Rural Development) project. The objective is to provide a set of continuing and updated information on aspects of Illinois agricultural and rural life.

Network Terminal Systems

ANTS (ARPA Network Terminal System) was developed at the Center in order to facilitate usage of ARPANET computing facilities. ANTS provides remote terminal connection facilities to the ARPANET, as well as access through a variety of sophisticated peripherals. The system has proved to be versatile and powerful enough to warrant interest by other ARPA network sites - as a result a considerable effort is ongoing at the Center to maintain and improve the ANTS system.

ARGONNE NATIONAL LABORATORY

Argonne National Laboratory is one of America's major atomic energy research and development establishments. It is located on a 3,700 acre site in DuPage County, Illinois, 27 miles southwest of downtown Chicago. The site can be reached via Interstate Highway 55 (U.S. 66) or by Illinois Highway 83. Some of the Laboratory's nuclear reactors and test installations are located at the National Reactor Testing Station near Idaho Falls, Idaho.

Argonne has approximately 4,400 employees, including 1,950 staff scientists and engineers. About 500 of these employees are at the Idaho site. The Chicago Operations Office of the U.S. Atomic Energy Commission is also located at the Argonne, Illinois, site.

Argonne National Laboratory is operated under contract to the Unites States Atomic Energy Commission, As such, most of the activities of the Laboratory are supported by Commission funds; however, a substantial number of research, development and planning projects are also conducted under the sponsorship of other federal, state, and local agencies through interagency transfers of funds.

The facilities of Argonne National Laboratory are owned by the United States Government. Under the terms of contract W-31-109-Eng-38 between the U.S. Atomic Energy Commission, Argonne Universities Association, and The University of Chicago, the University employs the staff and operates the Laboratory in accordance with policies and programs formulated, approved and reviewed by the Association.

Argonne has two principal objectives: It carries out a broad program of basic research activities, and it serves as an important center for the design and development of nuclear reactors. Almost all of the work at the Laboratory is unclassified.

THE ARGONNE ENERGY AND ENVIRONMENTAL STUDIES PROGRAM

The Energy and Environmental Systems Division (EES) is an interdisciplinary team of scientists and engineers that specializes in mission-oriented applied research, systems analysis, planning and field studies focused on technology assessment, natural resource management and environmental protection issues. The activities of EES include both a program of geophysical studies and the development and evaluation of plans, programs, and policies relating to energy supply and demand, urban and rural land use, air and ground transportation, natural resource management, and environmental waste management.

The Planning and Policy Evaluation branch of EES is experienced in solving problems through the application of systems analysis techniques. The activities of this group include problem and issue identification; formulation of alternative problem solutions, theoretical analyses and evaluations; information and field data collection, data interpretation; mathematical modeling; cost-effectiveness and cost-benefit analyses; socioeconomic and environmental impact assessment and pollution control policy evaluation. The staff maintains a library of state-of-the-art models and analytical techniques; an environmental data base, a computerized storage, retrieval, analysis and display system including land use, transportation, natural resource, and environmental quality information; and an expandable, modular computer modeling system. The group has worked closely with state and local government agencies to prepare and evaluate pollution control implementation plans.

The Research and Field Studies group consists of engineers and scientists engaged in the development and validation of socioeconomic and physical models and techniques for describing the impact of man and his technologies on the natural environment. Major model development, validation, and in situ field monitoring programs have been conducted

by this group during the course of studies of thermal pollution from power plants, river basin hydrology and water quality, and atmospheric dispersion of air pollutants.

The staff of EES has conducted numerous projects for the EPA and other federal agencies during the past several years. Some of the most current, and relevant, of these programs are briefly summarized below. Each of these projects has required the collection and analysis of data and information pertinent to the problem, the evaluation of alternative courses of action, forecasting of the effects of various control technologies and strategies, and the preparation of reports describing the conclusion of each analysis, based on substantiated results. Each of these programs has also required the delivery of these products under stringent time constraints. The experience and knowledge gained during the course of these studies qualifies the staff of EES to conduct analyses of the costs and effectiveness of alternative control technologies in meeting environmental criteria and standards, technological forecasting and payoff assessment, air pollution impact analyses of control technology for existing and future power generation sources, and R & D project selection.

The Environmental Statement Project (ESP) is another interdisciplinary, division-level activity wherein the skills of life scientists are combined with those of physical scientists and engineers to produce detailed statements of the potential impact of proposed or operating nuclear power plants. More than twenty statements have been written thus far. In addition to a comprehensive technical description of the probable environmental impact of a facility, a statement includes an assessment of possible adverse effects and of the adequacy of proposed countermeasures. Cost-effectiveness and cost-benefit analyses are an essential part of an environmental impact statement. The staff of the Project have therefore developed substantial expertise for the evaluation of the benefits and disadvantages deriving from the siting of central station power plants.

INSTITUTE OF GAS TECHNOLOGY (IGT)

The Institute of Gas Technology (IGT), Chicago, Illinois, was founded in 1940 and currently employees approximate 500 employees, one half of whom are technical personnel. IGT's budget is approximately $20 million and expects to expand to $25 million in FY '76. Of this, 55% comes from industry and 45% from government.

HYGAS - The Hygas coal conversion process is slurred with oil and fed to a gasifier at pressures of 1000 psi and temperatures up to 1750°f to produce pipeline gas. IGT Hygas Pilot Plant is located on the S-W side of Chicago on I 55 using approximately 75 tons per day (using Western Coal).

IGT has submitted a research proposal to ERDA (Feb. 6, 1975) to construct and operate a pressurized test gasifier to determine if the principle of selective ash removal from fluidized bed coal gasifier is applicable at elevated pressure. The four year program will cost $12.6 million. No state funds requested.

SOLAR ENERGY - The IGT's system, called SOLAR-MEC, is reported to be a "practical and economical system" for heating and cooling homes and small buildings with solar energy.

IGT has demonstration models scheduled in three locations (L.A., Montreal, and Chicago), in FY '76. They hope to locate other demonstration models in additional sites. It might be of some interest to our commission to locate in one of our state buildings to demonstrate to citizens of the State of Illinois the potential of solar energy.

IGT has a publication, "International Gas Technology HIGHLIGHTS", a newsletter that keeps the industry informed of current energy developments in worldwide energy projects. IGT Library and Technical Information Center has over an 18,000 volume library - making this one of the largest energy libraries in the nation. Arrangements have been made to use the facility when needed by our commission.

Other related energy programs include:

- Regional Energy Supply-Demand-Pricing Forecasting System
- Development of a Comprehensive Energy Policy Model
- Updating the Gas Industry Research Plan
- Survey of R & D Projects for Conversion of Coal to Gas & Liquid Fuels
- National and Regional Siting Studies for a Coal Gasification Industry
- Design and Operation of HYGAS Pilot Plant for SNG Production
- Development for Steam-Iron Process for production of Hydrogen for HYGAS Process
- Development of U-Gas Process for Production of Low or Medium-Btu Gas from Coal
- Coal Liquefaction
- Chemical Desulfurization of Coal
- Linden Heavy Oil Gasification Process
- Development of Solar Energy/Natural Gas-Powered Heating and Cooling Unit for Residential and Commercial Buildings

THE IIT RESEARCH INSTITUTE AND ITS PROGRAMS IN ENERGY

The IIT Research Institute is the largest independent contract research organization in the State of Illinois, and one of the largest in the world. Research, development, and engineering services are provided to government and industry through nearly 1000 completed programs each year. Total annual research volume is approximately $27,000,000.

The staff numbers 1300 persons and more than half hold degrees. IITRI constantly directs its resources into areas of current need. Included in the present major thrust areas are programs in productivity, health and safety, energy, electronics, materials, and pollution and environment.

IITRI is affiliated with the Illinois Institute of Technology but is managed and operated as a separate organization. The facilities are housed in a cluster of IITRI owned buildings located on the campus of IIT.

A number of IITRI's current programs are directed toward the solution of energy problems. Following are examples of some of the energy programs.

Materials Evaluation for Coal Conversion Applications (Gasification and Liquefaction) - sponsored jointly by ERDA and the Metals Properties Council.

These applications require use of materials (metals, ceramics, refractories, etc.) at higher temperatures and pressures and in more corrosive and abrasive environments than in previous cases. Our job is to develop evaluation methods, to expose candidate materials to the anticipated environments, and from the resulting data to make appropriate recommendations. This is a much more important program than might seem apparent on first thought, and will have much to do with the investments required in building such plants as well as in their maintenance. Several millions will be expended in this effort.

Chemicals from Coal - a Federally funded program.

Initial effort is to develop detergents out of char left from coal liquefaction process (FMC's Coed Process). It can be expected to continue for other useful products and possibly into use of coal instead of char as feedstock. It's important that we improve economics of coal conversion.

In most processes approximately 30% of coal input remains after gasification or liquefaction.

Also it is potentially possible to release the 4 or 5 percent of oil that now goes into non-fuel uses which could work to reduce our dependence on imported oil. Doing so with Illinois coal would result in a great benefit to the State's economy.

If we could attract chemical industries to the source of feedstock (coal or the residue from coal conversion operations) we would realize an even greater improvement in the States economy especially in the mining areas.

Urban Energy and Waste Reclamation - internally funded to date. An unsolicited proposal to ERDA is now under consideration.

When fully developed, the system will allow burning of city refuse at high temperature to recover both heat values and minerals (iron, aluminum, copper, glass, etc.). The recovered iron is in a molten state and is transferred to another reactor. The second reactor is a molten-iron coal-gasifier that allows efficient conversion of coal to low Btu gas for power generation. Sulfur is recovered from the gasifier so Illinois coal is quite suitable. When developed the system will:

* provide an environmentally acceptable and very efficient way to use Illinois coal for power generation,
* greatly reduce solid waster collection and disposal problems faced by cities,
* return heat and mineral values of city refuse to the economy on an economically inviting basis.

Low Cost Solar Collectors - sponsored by an industrial association.

Initially an evaluation effort, now turning into a conceptual design effort, to find ways to use copper in low cost solar energy collectors.

Coatings Evaluation - Federally funded.

A program to evaluate coatings being considered for application to solar energy collectors. This work is based on our earlier work for NASA in developing coating for heat energy management in space vehicles.

Bio-Effects Research - an EPRI program.

Power transmission is reaching the voltage and current levels which

require determination of the biological effects, if any, that might be experienced near transmission lines, substations, etc. IITRI is active in such programs.

High Pressure Water Jet - a series of projects with various sponsors.

IITRI is a world leader in high pressure water jet technology. We can expect the technology to find early application in coal mining and possibly in oil well drilling.

ENERGY RELATED LEGISLATION OF THE 79TH GENERAL ASSEMBLY

In 1975, the Illinois Energy Resources Commission introduced its first piece of legislation to the Illinois General Assembly. HB 1704 was an effort to stimulate energy research, development and demonstration projects by amending the Coal Development Bond Act. Originally, the bill would add $10 million in bonds to the already existing $70 million authorized to the Commission. However, the Senate amended the bill so that the $10 million would be allotted from the $70 million.

The need for the bill stemmed from several reasons. It has become apparent that our fossil fuels will inevitably run out; the length of time needed to develop alternative energy sources makes it imperative to begin research and development now, and public support for developing alternative sources was shown to be very strong during meetings held by the Commission across the State. Because of the problems facing us in the Middle East it is imperative that the U.S. become as self-sufficient as possible regarding energy.

The newly formed federal agency, Energy Research and Development Administration, solar and other alternative energy sources, has allocated approximately $421 million toward the development of alternative energy. With the funds from HB 1704 Illinois could bring some of this federally sponsored money to the State to aid our efforts to become self-sufficient.

HB 1704 was passed by the House and added $10 million in bonding authority to the Commission but was amended in the Senate to take the money out of the existing $70 million already authorized. The Senate deducted Research and Development and added energy conservation.

The following energy related bills were introduced in the 79th General Assembly.

1975

ENERGY RELATED BILLS

HB0114	HART	Intermittent control sys-regul	SEP26	H	PA 79-1099
HB0136	BORCHERS	Environmentl econ impact study	MAY20	H	STUDY CAL
HB0164	GROTBERG	Solar energy sys-exempt $2,000	SEP11	H	PA 79-943
HB0195	BRINKMEIER	School close,no fuel-no penlty	JUN25	S	FAILED ON THIRD
HB0255	RAYSON	Public utility show compliance	MAR13	H	DO NOT PAS TBLD
HB0310	CAPPARELLI	Gas Customers Protection Act	APR10	H	DNP AMEND TBLD
HB0357	MARAGOS	Public Utilities Board Created	APR30	H	FAILED ON THIRD
HB0553	LAUER	Electric cars-license plates	SEP03	H	PA 79-700
HB0654	BRUMMET	Coal right-royalty 2 1/2% paid	MAY21	S	AGR CON ENRGY
HB0746	RAYSON	Reusable beverage containers	APR21	H	DO NOT PAS TBLD
HB0945	CRAIG	Vehicle Code-uniform speed	MAY23	H	STUDY CAL
HB1108	MCGREW	Public Util-advertise expenses	APR23	H	DO NOT PAS TBLD
HB1339	NEFF	Public vehicles-get 16 MPG	MAY23	H	STUDY CAL
HB1340	NEFF	Vehicle Cde-sticker-gas mileag	SEP04	H	PA 79-747
HB1512	PIERCE	Energy Labeling Act created	JUN18	S	FAILED ON THIRD
HB1513	PIERCE	Civil Admin-wast paper recover	JUN26	S	FAILED ON THIRD
HB1514	PIERCE	Vehicle Cde-fuel perfornnc tax	MAY06	H	STUDY CAL
HB1515	PIERCE	Public Util-insulat'n standard	JUN11	S	DO NOT PAS TBLD
HB1516	PIERCE	Public Utilities-advertising	APR26	H	STUDY CAL
HB1643	DUNN,RALPH	Energy Resource Comm-fellowshp	APR25	H	DO NOT PAS TBLD
HB1644	DUNN,RALPH	$200,000 - ERC - fellowship	APR25	H	DO NOT PAS TBLD
HB1704	GEO-KARIS	$10,000,000-Coal Develop Bond	NOV06	H	GOV ACTION STND
HB1705	GEO-KARIS	Energy Resources Commis-approp	MAY29	H	STUDY CAL
HB1838	PIERCE	Beverage Container Act-defines	MAY06	H	STUDY CAL
HB1843	COFFEY	Surface-Mined Land Conservat'n	MAY22	H	FAILED ON THIRD
HB1926	MATIJEVICH	Coal Development-condemn land	SEP03	H	PA 79-713
HB2156	HOFFMAN,GL	School Cde-tax levy	MAY23	H	STUDY CAL
HB2171	WADDELL	Home Energy Conservation Act	MAY06	H	STUDY CAL
HB2404	TIPSWORD	Mining regulat'n-notification	JUL03	H	STUDY CAL
HB2720	POLK	Nuclear occurrences report	JUN26	S	AGR CON ENRGY
HB2801	YOUNGE	Sowest Reg Port - construction	JUN13	H	TABLED
HB2834	KELLER	$60,000-Wabash Study Comission	JUN05	H	STUDY CAL
HB2835	KELLER	Wabash Study Commission creatd	MAY23	H	STUDY CAL
HB2863	PIERCE	Energy conserve requirements	MAY06	H	STUDY CAL
HB2885	PIERCE	Division Solar Energy-create	JUN25	S	FAILED ON THIRD
HB2893	PIERCE	Rate class for consumers	APR26	H	STUDY CAL
HB2929	PIERCE	Waste Oil Recovery Act	MAY06	H	STUDY CAL
HB2967	GEO-KARIS	Energy Resourc Comm-emergency	JAN14	H	RULES
HB2996	GEO-KARIS	$100,000-Energy Resourc Commsn	JUN04	S	APPROPRIATION
HB3025	LABOR COMMRCE	Coal Mining-adds provisions	AUG17	H	PA 79-460
HB3031	PUB UTILITIES	Public Util-property assessing	JUN05	H	FAILED ON THIRD
HB3229	NEFF	Vehicle Cde-fuel economy label	JAN14	H	RULES
SB0141	SHAPIRO	$---Northern Ill Univ-transfer	MAY16	S	PA 79-23
SB0325	BRUCE	Oil & Gas pools-pub hearings	AUG18	S	PA 79-462
SB0376	GLASS	Bevrg Contanr Act-def containr	APR30	S	DNP AMEND TBLD
SB0392	CHEW	Vehicle Code-speed limit 55mph	OCT22	H	STUDY CAL
SB0402	PARTEE	Schl Code-nuclear energy prog	JUN02	H	TABLED
SB0403	PARTEE	$475,000-Ill office of Educatn	JUN02	H	TABLED
SB0499	REGNER	Issue bond-proj life expectncy	MAR26	S	FIN CRED REGS
SB0602	LANE	ICC hearings-new bldg insulatn	JUN04	H	DNP AMEND TBLD
SB0664	JOHNS	Coal Severance Tax Act-creates	APR24	S	DO NOT PAS TBLD
SB0760	BELL	St waste oil collect sys-study	APR30	S	DO NOT PAS TBLD
SB1066	BERNING	Economic productivity assesmnt	NOV06	S	GOV ACTION STND
SB1299	BRUCE	Energy Agencies-creates	APR16	S	AGR CON ENRGY
SB1449	NEWHOUSE	State Building Code Act-create	APR16	S	PUB WELF CORR
HR0087	STEELE,EG	Legis Invest Com-State autos	APR22	H	RESOLVE PASSED
HR0241	PORTER	DOT study computer carpool	JUN05	H	RESOLVE PASSED

ILLINOIS: ENERGY ACCOUNTABILITY

The Commission is mandated to "study, review and recommend" both energy related programs of various State agencies and the State's long range programming of energy related problems. In order to further the Commission's information base on State level involvement in influencing an "Energy Policy" for Illinois, preliminary review of organization and budget responsibility has been undertaken. This research, and a more thorough investigation into Illinois' governmental "energy" structure will continue during the next year.

This is especially important in light of the Governor's FY '77 reorganization proposals, two of which affect energy related agencies. The Governor will ask the legislature to approve the creation of the Illinois Energy Agency, which elevates the Division of Energy, Department of Business and Economic Development to an agency status, and transfer of the Natural History, Water and Geological Surveys to the Institute For Environmental Quality.

The role governmental units play in the energy question can be stated as: Certain agencies, boards and commissions affect the development of immediate (present to 1985), mid-term (1985-2000) and long-term (2000 and beyond) "Energy Policy" by their statutory or executive order mandate. (For example: The IERC and the BED, Division of Energy coordinate to develop and fund research projects that advance the technology of the use of high-sulfur coal, a major Illinois energy resource.) All agencies, however, as consumers of energy products affect energy product availability in Illinois. In this context, State operated physical plants (considered as a whole) make an impressive "industrial model" and afford the State an opportunity to demonstrate to private citizens and industry the

potential energy savings available through development and use of energy conservation guidelines.

Our research has identified the following agencies as directly affecting the development of an Illinois "Energy Policy" (IERC not included here). Included is a description of the agency functions and a dollar value in $ thousands extracted from the FY '77 budget proposal. It should be noted that since "energy" is a complicated, multi-faceted question, the summation of these budget request figures is not necessarily even a guideline as to the cost of an "Energy Program" for Illinois.

Department of Business and Economic Development: Division of Energy

The Division was established to handle the operations of project development for the Illinois Coal Development Bond Act established during the 78th General Assembly. It is their primary responsibility to seek projects which would make a meaningful contribution to the future development and utilization of Illinois coal resources. These projects, once funding is approved by the Illinois Energy Resources Commission, are monitored and administered by the Division of Energy.

In 1975, the Governor transferred the Office of the Illinois Energy Coordinator to the Division of Energy. The Division, therefore, is also responsible for the fuel allocation programs of that unit. As stated above, the Governor proposes to elevate this division to agency status. This is proposed by the Governor as the best method to " . . . administer federal energy legislation and continue the successful coal and other energy activities . . . ". The Governor also maintains that this reorganization is also necessary "in order to insure that Illinois receives its fair share of federal funding - up to $2.8 million a year . . . ".

It must be noted that review of the "Energy Policy and Conservation Act" and the Federal Energy Administration's "State Energy Conservation

Plans" guidelines in the FEDERAL REGISTER, Vol. 41, No. 20, January 29, 1976, show no direct reference or federal requirement to state development of an energy agency. Also, the $2.8 million is a proposal, subject to appropriations made available for this program, and then only for FY '76, '77 and '78.

The Illinois Energy Agency appropriations request (less $10,000.0 in Coal Development Bonds) is $909.6, a proported $129.1, or 14.2%, decrease over FY '76 expenditures. If, however, the Office of Illinois Energy Coordinator (fuel allocation) line item was removed and considered separately, the actual appropriation request would be $856.6, a $56.0, or 6.5%, decrease. Further study of the budget request shows a 9.5% increase over FY '76 for operations.

Illinois Commerce Commission

The Illinois Commerce Commission is mandated to regulate public utilities to assure that privately owned gas, electric, water, commuter railroads, sewer, telephone and motor bus companies maintain safe operations and charge reasonable fares to the consumer.

In support of this mandate, the Director's Administrative Assistant for Energy monitors both the state and national implications of energy consumption, rating and product development as it pertains to Illinois' involvement in energy related commerce and its regulation. More specifically, the office is responsible for:

* The advancement of nuclear power;
* Energy conservation;
* Development of Energy Models;
* Re-designing of rate structures;
* Liaison to various agencies, commissions and associations.

Other than on-going regulatory activities that are related to the production and distribution of energy, the Commission has proposed in its FY '77 budget to sample and evaluate alternative rate structures

to determine the impact upon various classes of customers. The Commission in its FY '77 Contractual Services line item has proposed the allocation of $50.0 - $60.0 to perform this evaluation. This amount would be used to retain a consultant or consulting group that is capable of evaluating and analyzing data that would be generated.

This data and information would be integrated into the rate case process and/or used as the basis for a review of rate design and rate structures of the Illinois energy utilities.

Institute for Environmental Quality

The Institute conducts fact-finding projects and research that provide state agencies with environmental information. This information provides a basis for making policy decisions on the management of the environment and natural resources of the State. In addition, the Institute will expand its role in energy research in support of the State's energy development programs. Included in the Institute's research are:

* Exploring environmentally sound methods for the accelerated utilization of Illinois coal; and

* Stimulating the development of synthetic fuel processes including coal gasification and liquefaction.

As previously stated, the Governor proposes to transfer the Natural History, Water and Geological Surveys to the Institute. This move, which was recommended by the legislature during the 79th General Assembly (HB 1145), would centralize the State's research activities.

The Institute for Environmental Quality has requested $2,139.0 for FY '77.

Department of Registration and Education: State Geological Survey

The Survey plans and conducts geological investigations that will result in long-range advantages to the State. The Survey's responsibilities that relate to energy are:

* Research on the rock and mineral resources of the State, their occurrence, character, and usefulness;

* Investigation of the geology of Illinois needed for solution of environmental problems related to energy sources and other causes;

* Maintain a program of coal research designed to:

  - gain greater knowledge of the fundamental nature of coal,
  - determine properties of the impurities in coal, and
  - determine the characteristics of coal deposits including bed size, depth, extent of mineral content and exact location of the deposits;

* Research into methods of sulfur removal from coal;

* Maintain geological information such as gas and oil wells, drill holes, and underground rock formations useable as reservoirs for the storage of natural gas; and,

* Monitoring the mineral market status and its effect on Illinois mineral resources by the mineral Economics Group.

The State Geological Survey FY '77 budget request is $2,660.1.

Department of Mines and Minerals

The Department of Mines and Minerals is the regulatory agency for the vast mineral extraction industry and has an important energy related role in Illinois. This regulatory authority encompasses the pre-mining, mining and reclaiming the surface after mining. The mine inspection and mine safety training programs insure that the minerals will be extracted in an orderly manner that considers the health and safety of the workers as well as an impact on the environment.

The agency budget request for Fiscal Year 1977 is $1,966.0 for operations.

Illinois Department of Transportation

The Department of Transportation activities, generally speaking, impact energy consumption, but the following programs have been identified as directly energy related:

* Energy Impact Evaluation Program:

  This program will result in the development of three products. The first product is a process to evaluate energy expenditures and conservation for all modes. The second product is the development of a set of criteria for the planning and programming process to be used for intermodal split evaluation. The third product is a set of criteria to be used to measure energy impacts of individual transportation projects.

* Special Energy Transportation Studies:

  This program will evaluate energy transportation alternatives. Presently carpooling and vanpooling are under study.

* Study of Transportation Energy Access Studies:

  The products of this program include a series of 58 county maps on which are located coal mines by type and capacity, oil production areas, bulk storage facilities for oil and gas, terminal facilities, diesel fuel terminals, etc.

Program Costs for FY '77 are estimated at $60.0.

****

The above described agencies have a primary effect on energy and development of an "Energy Policy" for Illinois because of their legislative mandate or authority under Executive Order. It should be understood that every state agency affects energy policy indirectly, either by favorable influencing their 'public' in relations to energy matters, or as an 'industrial model', exemplifying their moderate consumption of energy products.

The Capitol Development Board has developed and implemented a set of guidelines to be used by the State for energy construction. This manual, "Energy Conservation Guide for Construction of State Funded Buildings", has been in use for over two years. It was the first such text developed on the State level by State government and has also been in demand by local private industry.

The Illinois Energy Resources Commission, through the Inter-Agency Task Force, has observed the voluntary adoption and generally favorable attitude among agencies toward energy conservation techniques (thermostats set low, excess fluorescent lights disconnected, etc.).

There has also been a consorted effort among agencies with large physical plant facilities to apply energy conserving methods to reduce their overall energy consumption.

For example, the Department of Mental Health and Developmental Disabilities instituted a program of energy conservation in late 1973 that saved the State $2,935,668 in fuel (coal, oil, natural gas) consumption, $57,306 in water usage, and $202,110 in electrical energy savings for FY '74 and FY '75 combined. The grand total savings by the Department of Mental Health and Developmental Disabilities was $3,195,084.

Meetings of the Illinois Energy Resources Commission's Inter-Agency Task Force are intended to be a forum for discussion among agencies on how these types of savings are possible by their respective agencies. The overall importance of this function of the IERC can be seen in view of the "Energy Policy and Conservation Act" signed into law by President Ford in December, 1975. The Act, which is at the present time voluntary, will require states to develop plans reducing energy usage by at least 5% of the 1974 level by 1980 in order to receive federal grants for energy conservation.

STATE AGENCIES WITH ANNUAL REPORTS RELATED TO ENERGY

Summary

There are four energy related groups in Illinois which are required by statute to file reports on a regular basis with the General Assembly: the Illinois Commission on Atomic Energy, the Illinois Energy Resources Commission, the Illinois Institute for Environmental Quality and the Midwest Nuclear Board. Four other agencies within the executive branch of State government are responsible for different aspects of energy resources development or use: the Illinois Commerce Commission, the Department of Business and Economic Development, the Department of Mines and Minerals, and the State Geological Survey. These agencies publish energy related reports which are not necessarily mandated by law.

Illinois Commission on Atomic Energy

Purpose: To investigate and study the economic and technical impact of atomic energy on the citizens of the State.

Report: Required to file a report to the Governor and the General Assembly by April 1 of every odd numbered year. (Ill. Rev.Stat. 1974 Supp., ch. 127, sec. 543.) It may also submit additional reports at the discretion of the Commission.

Illinois Energy Resources Commission

Purpose: To review administrative structures and ongoing programs which are seeking solutions to energy related problems, to formulate a long range energy resources plan, to disseminate information and to approve general obligation bonds for coal development.

Report: Required to file a report to the General Assembly by March 15 of each year. (Ill.Rev.Stat. 1974 Supp., ch. 93, sec. 308.)

Illinois Institute for Environmental Quality

Purpose: To investigate practical problems, implement studies and programs, and to recommend changes in policy relating to environmental protection including conservation of natural resources. In 1974, the agency published several reports which were energy related.

Report: Required to file an annual report (no date specified) of its activities and recommendations to the Governor and the General Assembly. (Ill.Rev.Stat. 1973, ch. 11 1/2, sec. 1006.)

Midwest Nuclear Board

Purpose: To encourage and promote cooperation among the party States of the Midwest Nuclear Compact, to disseminate information, to conduct training programs in specified aspects of nuclear technology development, and to recommend safety standards for use of nuclear power and the disposal of its waste products.

Report: Required to file an annual report to the Governor and legislature of each State which is a party to the compact. (Ill. Rev.Stat. 1973, ch. 127, sec. 63t-11, Art II(1).)

The Board is awaiting recognition by Congress before undertaking any of its assigned duties. A bill is presently in committee in the U. S. House of Representatives to have the Midwest Nuclear Compact officially recognized.

Illinois Commerce Commission

Purpose: To regulate public utilities and motor carriers for-hire which are not municipally owned or operated.

Reports: Among other documents, the Commission publishes the annual statistics of gas and electricity sales in Illinois. (Ill.Rev.Stat. 1973, ch. 111 2/3.)

Department of Business and Economic Development

Purpose: To stimulate the State's economy through programs of industrial and community development, international trade, tourism, economic research, and water and natural resources development. (Ill. Rev.Stat. 1973, ch. 127, sec. 46.1)

Reports: The Department publishes an annual report, "Illinois State and Regional Economic Data Book". The Department published a separate document, "Program Report of the Division of Energy", in November 1975, which details the Division's current energy related projects.

Department of Mines and Minerals

Purpose: To supervise and regulate activities of certain mineral extraction industries including setting standards for the protection of the health and safety of miners. (Ill.Rev.Stat. 1973, ch. 127, sec. 45.)

Reports: The Department publishes annual statistics of coal, oil, and gas production in Illinois.

State Geological Survey

Purpose: To conduct research on rock and mineral resources, to study the geology of Illinois and its environmental problems, and to publish maps on the topography, geology and rock strata of Illinois. The Survey is established in the Department of Registration and Education under the Board of Natural Resources and Conservation. (Ill.Rev.Stat. 1973, ch. 127, sec. 58.23.)

Reports: Many of the documents of the Geological Survey are directly related to energy. The Survey compiled its "List of Publications" which serves as an index for materials available from the Survey.

ENERGY CONSERVATION

At the Geneva Youth Center near Geneva, Illinois, the main boilers were completely shut down from 9:30 p.m. until 6 a.m. from April 15th through October 15th in 1975, resulting in an overall natural gas savings of 17000 therms a month or $2,040 a month savings. This year the Department of Corrections is going to do the same thing at the St. Charles Youth Center, Joliet Youth Center, Joliet Correctional Center and 1977 the Pontiac Correctional Center.

A program is also in progress to lower the lighting levels in these facilities to that recommended by the Federal Energy Administration.

FEDERAL GOVERNMENT

The Administration's FY '77 budget for a National Energy Program is designed to greatly enlarge the flow of direct and indirect federal aid to energy production, especially to nuclear power. The FY '77 budget recommends across-the-board increases averaging 30% for energy research and development (R & D) programs. Other programs included for FY '77:

* To help finance commercial energy projects; the Administration is reaffirming its support for an Energy Independence Authority that would offer $75 billion worth of loans and loan guarantees, and $25 billion in direct investments over its 10-year life span.
* To get a head start on federal aid before the authority can commence operations, the Administration seeks authority to guarantee up to $2 billion worth of loans for synthetic fuel projects in a FY '76 supplemental request.
* To boost the production of enriched uranium for nuclear power plants, the Administration has proposed that private industry be allowed to enter the enrichment business.
* To expand the power output of the TVA, the budget forecasts capital outlays of $1.2 billion during FY '77 with most of the funds earmarked for planning and construction work on eight nuclear plants.

Most of the Energy spending (98%) on federal level will aim at achieving greater energy independence by expanding domestic energy capabilities through energy development and production, research and development, strategic petroleum storage and energy conservation.

The National Energy Budget dollar outlays are:

DOMESTIC ENERGY RESOURCE	FY 76	FY 77	increase
DEVELOPMENT, CONSERVATION, AND PETROLEUM STORAGE	$5.5 billion	7.3 billion	31.6%
ENERGY RESEARCH DEVELOPMENT AND DEMONSTRATION	$2.2 billion	2.9 billion	30.3%
REGULATORY FUNCTIONS	$234 million	244 million	4.3%
TOTAL OUTLAYS	$7.9 billion	10.4 billion	30.4%

The energy dollar can be further broken down as follows:

ENERGY AREA	BUDGET $ MILLIONS	
CONSERVATION	120.0	
FOSSIL ENERGY	477.2	
*COAL		408.9
*PETROLEUM & NATURAL GAS		37.2
*IN SITU TECHNOLOGY		31.1
SOLAR ENERGY	160.0	
*DIRECT THERMAL APPLICATIONS		49.2
*SOLAR ELECTRIC APPLICATIONS		102.5
*TECHNOLOGY SUPPORT AND UTILIZATION		4.0
*BIOMASS		4.3
GEOTHERMAL	*100.1	
FUSION	392.1	
FUSION REACTION DEVELOPMENT	823.0	
SUPPORTING ENERGY RESEARCH	428.5	
URANIUM ENRICHMENT	685.9	
NATIONAL SECURITY	1943.3	

*Includes a $50 million geothermal loan guarantee program.

SYNOPSIS

ENERGY POLICY AND CONSERVATION ACT

Congress, in recognizing the need to set goals and standards by which to achieve a significant level of energy conservation and to organize a petroleum contingency plan to deal with severe petroleum shortages, recently passed SB 622. This bill gives the President new powers in standby rationing authority and invites the Governors of each state to submit energy conservation plans which, when implemented, will target for an overall five percent reduction in our energy budget. The bill was signed into law by President Ford on December 17, 1975.

The specific purposes set forth in the new "Energy Policy and Conservation Act" are as follows:

1. The President is granted specific standby authority to impose rationing through the implementation of energy conservation plans;

2. to provide for the creation of a Strategic Petroleum Reserve capable of reducing the impact of severe energy supply interruptions;

3. to increase the supply of fossil fuels in the United States, through price incentives and production requirements;

4. to conserve energy supplies through energy conservation programs, and where necessary, the regulation of certain energy uses;

5. to provide for improved energy efficiency of motor vehicles, major appliances and certain other consumer products;

6. to reduce the demand for petroleum products and natural gas through programs designed to provide greater availability and use of this nation's abundant coal resources; and

7. to provide a means for verification of energy data to assure the reliability of energy data.

This Act affects the state in many ways, but its principal thrust gives the state the responsibility to establish a conservation plan. First the state will assess the feasibility of realizing the five percent energy reduction by 1980 and propose a plan for its achievement. At this time, the deadline for this is May, 1976.

Secondly, each state, at the necessary time, will detail ways in which the five percent reduction can be met. To obtain federal funding assistance for plan implementation, the state must devise mandatory lighting efficiency standards, promote car pooling and public transportation, set standards for energy efficient state procurement practices, establish mandatory thermal efficiency standards and other energy conservation ideas particular to each state.

The State of Illinois has set up a panel, consisting of appropriate state agencies, to determine each agency's internal participation in the conservation program, as well as how they will cooperate to effect the energy conservation measures in the context of their programs.

The state is participating in this project to the fullest extent, to fully achieve the ambitious energy reduction goals set by the program. The ultimate objective is to detail by approximately November, 1976 a clear concise and meaningful energy conservation plan which will allow the state to move forward in a unified direction.

ACKNOWLEDGMENT

The members of the Illinois Energy Resources Commission would sincerely like to thank each of the individuals and organizations who have furnished the Commission with materials and information for this report.

The completeness of this report has only been made possible through their kind cooperation and assistance.

Representative Adeline J. Geo-Karis
Chairman, Annual Report Committee

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ILLINOIS ENERGY RESOURCES COMMISSION

Report to the
General Assembly
of the
State of Illinois

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Illinois Energy Resources Commission

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March 15, 1975

To the Members of the
79th General Assembly

Dear Members:

The first annual report of the activities of the Illinois Energy Resources Commission is hereby submitted in accordance with Public Law 78-1125.

The Commission consists of ten legislative members and eight public members. Although Public Act 78-1125 was passed on August 19, 1974, the Commission did not have its organizational meeting until December 13, 1974.

This report covers the period from December 13, 1974, the date of the first organizational meeting, through March 6, 1975.

It is recommended by the Commission that more hearings be held to include nuclear energy and solar energy, and that recommendations to this General Assembly be submitted after an evaluation of all the hearings has taken place both by the Commission members and experts in the related fields.

We regret to inform you that one of the Commission members, the Honorable Earl Madigan, passed away on January 30, 1975.

Adeline J. Geo-Karis
Chairman

John L. Knuppel
Vice Chairman

Otis J. Gibson
Secretary

mw

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SUMMARY AND EXPLANATION OF ILLINOIS ENERGY RESOURCES COMMISSION

The Illinois Energy Resources Commission has the responsibility to coordinate all energy efforts in Illinois and provide a long range solution to the energy crisis.

Currently, the energy crisis facing our citizens, is more of an economic and availability crisis with the dependency on foreign sources. In 1974 our nation spent approximately $25 billion on oil imports as compared to a $13 billion spent in 1973. At our current use of oil, it is estimated that $70 billion will be spent in 1985 on oil imports. It is imperative that we become more energy self-sufficient.

Another major effort of the Commission is to review the proposals for the expenditure of Coal Development Bond Act funds. The Commission has the authority to approve or reject such proposals up to $70 million.

Illinois, which has the nation's largest reserves of bituminous coal and presently supplies about 10 per cent of the national consumption, should obviously play a leading role in any major shift to coal-based energy economy. A real opportunity now exists to provide a much needed economic stimulus to the state.

Traditional methods of burning coal are entering a new era through the development of equipment to remove sulfur oxides from power plant supplies.

Since chemical structure of coal lends itself to conversion into new and more environmentally acceptable fuel forms, the way is open for the coal industry and government to take a giant step toward meeting the nation's sharply increasing demands for energy. Research has shown that coal can be converted from its solid state into cleaner, easier-to-handle liquids and gaseous forms, and the time has come when Illinois and the nation is anxiously trying to supplement its gas and oil reserves.

The challenge now is for the State of Illinois to bring this technology into the realm of everyday, commercially available systems.

In view of our nation's goal to become energy self-sufficient, the Illinois Energy Resources Commission has a very meaningful task to perform; to establish and coordinate state policy with national policy on energy and to develop a long-range energy plan for the State of Illinois.

One of the most important tasks of this Commission is to find a process by which Illinois coal can be utilized to the maximum in an economic and environmentally safe manner.

ENERGY RESOURCES COMMISSION

PUBLIC ACT 78–1125

HOUSE BILL 2651

An Act creating the Illinois Energy Resources Commission and defining its powers and duties.

Be it enacted by the People of the State of Illinois, represented in the General Assembly:

Section 1. [S.H.A. ch. 93, § 301]

There is created the Illinois Energy Resources Commission, hereinafter in this Act called the Commission.

The Commission shall consist of 3 members of the House of Representatives and two public members all appointed by the Speaker of the House; 2 members of the House of Representatives and 2 public members all appointed by the Minority Leader of the House; 3 members of the Senate and two public members all appointed by the President of the Senate; 2 members of the Senate and 2 public members all appointed by the Minority Leader of the Senate.

The Commission shall select from its membership a Chairman who shall be a legislative member and any other officers it considers necessary. The Chairmanship of the Commission shall rotate biannually between the houses of the General Assembly in accordance with the appointment schedule set forth in Section 2 of this Act,[1] except that the member of the General Assembly elected to be the first Chairman of the Commission shall be eligible to succeed himself for a second, consecutive term as Chairman.

The Commission shall meet at the call of the Chairman after due and reasonable notice to all Commission members, except that a majority of the Commission members may convene a meeting of the Commission in the event the Chairman refuses to do so.

[1] Chapter 93, § 302.

Sec. 2. [S.H.A. ch. 93, § 302]

The initial membership shall be appointed within thirty days after the effective date of this Act, and serve until June 30, 1975. Thereafter, the membership shall be appointed during the month of June in each odd numbered year and shall serve terms of two years, beginning on July 1 of the year in which they were appointed, or until their respective successors are appointed. All appointments must be in writing and filed with the Secretary of State as a public record.

Vacancies in the membership of the Commission shall be filled in the same manner as the original appointments. Members of the Commission shall serve without compensation, but shall be reimbursed for actual expenses incurred in the performance of their duties.

Sec. 3. [S.H.A. ch. 93, § 303]

The Commission shall:

(1) Study, review and make recommendations on the administrative structure the State should adopt for the efficient management of the State's effort in finding solutions to energy related problems;

(2) study, review and make recommendations to coordinate the proposed or ongoing programs of the various State agencies with reference to the solution of energy related problems;

(3) study and make recommendations concerning a long-range program relating to energy resources and related problems, including but not limited to conservation of energy, development of energy resources, environmental considerations and other related problems;

(4) seek the cooperation and assistance of energy producers, institutions of higher education, energy research institutions, and other public and private organizations and groups interested in finding solutions to energy related problems;

(5) promote the establishment by the federal government of a coal resource, research and development center and other federal energy projects in Illinois, and search for additional or other means of using Illinois coal to meet Illinois energy needs with due attention to environmental priorities;

(6) disseminate relevant information to the public for purposes of consumer education and protection.

Sec. 4. [S.H.A. ch. 93, § 304]

All proposed projects under the program of capital development of coal resources funded through the sale of general obligation bonds created in "An Act to provide for the financing of a State program for research, development and demonstration in coal and energy; to authorize the issuance and sale of general obligation bonds of the State of Illinois; and to provide for the payment of the principal of and interest on such bonds," enacted by the 78th General Assembly, shall be submitted for review and by a majority vote approval or rejection by the Commission. The Commission shall review and by a majority vote approve or reject each such project and a dollar cost range. Such review and approval or rejection shall be made within 45 days of the receipt of each proposal by the Commission.

No expenditure of general obligation bond funds for the development of coal resources shall be made without the prior approval of the specific project by the Commission, except that a specific proposal shall be deemed to be approved if the Commission fails to act within the 45 day period.

Sec. 5. [S.H.A. ch. 93, § 305]

The Commission may, without regard to the Personnel Code, employ or contract for the personnel and services necessary to develop the capability of analyzing and making recommendations to the Commission pursuant to the provisions of this Act.

Sec. 6. [S.H.A. ch. 93, § 306]

In aid of the Commission's work, all departments, divisions, agencies and offices of the State shall afford to the Commission any requested resources, information, records, or advice pertinent to the subject matter under study.

Sec. 7. [S.H.A. ch. 93, § 307]

In the performance of its duties, the Commission may accept grants or funds from the federal government, foundations, or other public or private organizations.

Sec. 8. [S.H.A. ch. 93, § 308]

The Commission shall submit an annual report of its findings and recommendations to the General Assembly, no later than March 15 of each year.

Section 9. [S.H.A. ch. 93, § 301 note] This Act shall take effect upon its becoming law.

Approved and effective Aug. 19, 1974.

OBJECTIVES AND RESPONSIBILITIES

The task of IERC, among other things, is to implement and carry out the objectives listed and defined in Sections 3 and 4 of the Amendment in the Enabling Act (PA-78-1125). Some type of organized approach to the accomplishment of these objectives will be necessary. It is intended that the following define those objectives and investigate some of the possible avenues that are available to the Commission in each area:

I. Objectives of Commission

A. Energy Administration - Section 3, items 1-3.

B. Energy Development - Section 3, items 4-6.

C. Review and Analysis of Proposals (Sec. 4) and approval or disapproval of coal and other energy fund proposals undertaken under the provisions of Illinois Senate Bill 1659 (Sec. 6) for both SCOPE and dollar cost range. (Majority vote of Commission necessary.)

II. Responsibilities of the Commission

A. Energy Administration

1. Preparation of an administrative structure recommendation for submission to the General Assembly for efficient management of the State's efforts in finding solutions to energy related problems.
2. The coordination of proposed or ongoing programs of the various State agencies with reference to the solution of energy related problems.
3. Production of a long range program relating to energy resources and related problems including but not limited to conservation of energy, development of energy resources, environmental considerations and other related problems.
4. INVENTORY OF ALL ENERGY RESERVES IN THE STATE OF ILLINOIS.
5. Structure of an approach of State to the energy situation, to best serve the needs of the people of the State of Illinois. This structure can best be obtained by:
   (a) Determination of the status of current energy programs.
   (b) Development of a long range stance.
   (c) An administrative structure designed to implement energy programs.

B. ENERGY DEVELOPMENT EVOLVEMENT
   1. Promote the establishment by the federal government of a coal resource, research and development center; and other federal energy projects in Illinois, and search for additional other means of using Illinois coal to meet Illinois energy needs with due attention to environmental priorities.
   2. Seek the cooperation and assistance of energy producers, institutions of higher education, energy research institutions and other public and private organizations interested in finding solutions to energy related problems.
   3. Disseminate relevant information to the public for purposes of consumer education and protection.
   4. Involvement of all segments of the State of Illinois for a meaningful and constructive energy program, proportionate to our resources and size.

C. REVIEW, APPROVE OR DISAPPROVE OF COAL AND OTHER ENERGY FUND PROPOSALS BY COMMISSION MEMBERS OF PROJECTS UNDERTAKEN UNDER THE PROVISIONS OF ILLINOIS SENATE BILL 1659, SECTION 6, BOTH FOR SCOPE AND DOLLAR COST RANGE (MAJORITY VOTE OF COMMISSION NECESSARY).

D. COORDINATION OF ENERGY RELATED PROGRAMS AND PROJECTS BY BOTH PUBLIC AND PRIVATE AGENCIES.
   1. Necessary background information of agencies:
      (a) What is each agency currently involved with in energy?
      (b) What are each agency's resources?
      (c) How do they fit the requirement?
      (d) What are the agency's future plans?
      (e) Are there overlapping areas?
      (f) What areas should be covered?
      (g) What areas are not covered?
      (h) Which agency is best able to handle the responsibility?
      (i) What source of financing does each agency have?

E. DATA NECESSARY FOR DEVELOPMENT OF LONG RANGE PROGRAMS.
   1. Knowledge of the requirements current and future of the State Energy supply.
      (a) Energy inventories by function and type both present and future requirements.
          (1) Agriculture
          (2) Industry and Business
          (3) Transportation
          (4) Government
          (5) Private use
          (6) Other
      (b) Type of energy supplies.
          (1) Nuclear
          (2) Coal
          (3) Gas
          (4) Solar
          (5) Oil
   2. Implementation of necessary energy data for energy coordination required by the State.

F. EVALUATION OF REQUESTS FOR COAL AND OTHER ENERGY RESEARCH AND DEVELOPMENT FUNDS.

INFORMAL PRESENTATION OF TECHNICAL REPORTS

PROJECT 1: LOW BTU GASIFICATION

Intent of project is to install a low BTU coal gasification project. Gas will be used as fuel for a 110 mw combined electric generating facility. Phase I deals only with gasification and feed of such gas to an existing boiler, and is underway. Phase II utilizes steam/gas turbines and is in planning stage. Total expected cost $53 million.

PROJECT 2: PRESSURIZED FLUIDIZED BED BOILER (PFB)

To develop, construct, and operate a 60 mw combined cycle PFB at Illinois Power's Wood River plant site. Phases I and II (cost $30 million) for feasibility studies, research and development will take two years; Phases III and IV (cost $60 million) will take an additional six years.

State Involvement: Company is asking for State technical assistance during Phases I and II and $12 million during Phases III and IV.

PROJECT 3: HIGH BTU GASIFICATION

Scope: To install and operate a commercial coal gasification plant. Cost will be approximately $700 million.

State assistance required to expedite permits, siting, water, and land rights.

PROJECT 4: HIGH BTU GASIFICATION

Scope: To construct and operate commercial-sized gasification plant in Illinois. Capital costs $700 million range.

PROJECT 5: HIGH BTU/LIQUEFACTION PROCESS

Scope: To install and operate a demonstration plant in Illinois, based on the Char-Oil-Energy-Development process. Plant site tentatively in northern Illinois. Estimated cost between $250 - $400 million range.

PROJECT 6: HIGH BTU GASIFICATION

Scope: To install and operate a commercialized gasification plant. Capital costs estimated in $700 million range.

PROJECT 7: SOLVENT REFINED COAL (SRC)

Scope: To install and operate an SRC plant in Illinois. Novelty of process is that new technology will allow final product to be liquid at room temperature, thus an excellent utility boiler fuel. Demo plant 5,000 ton/day; commercial 20,000 ton/day.

PROJECT 8: LOW BTU GASIFICATION

Scope: To construct and operate a demonstration-sized plant to feed gas to utility or commercial boiler. Have contacted University of Illinois. Capital needed estimated at $12-$40 million.

PROJECT 9: GASIFICATION RESEARCH FACILITY

Scope: Construct and operate a major research center for coal gasification.

PROJECT 10: PRODUCTION OF HYDROGEN

Scope: To test one hundred tons of Illinois #6 coal in California pilot plant, producing hydrogen from partial oxidation of coal.

PROJECT 11: AMMONIA/FERTILIZER FROM COAL

Scope: To complete preliminary work towards a gasification plant. Concept envisions a $200 - $300 million facility.

PROJECT 12: COAL LIQUEFACTION/GASIFICATION

Scope: To construct and operate a small demonstration plant using COED technology and char gasification.

SUMMARY OF COMMISSION MEETINGS

December 13, 1974 - Organizational Meeting

The following were elected as commission officers; Representative Geo-Karis - Chairman, Senator Knuppel - Vice-chairman and public member, Otis Gibson, secretary.

Dennis Hayes, Energy Coordinator made a brief statement with regard to energy possibilities in Illinois. He listed low and high BTU gasification, solar and heat pumps, gas from animal waste, solid waste fuel and pumped air storage as a few possibilities to consider.

Ted Silverman, Acting Director of the Department of Business and Economic Development described the needs of the business community in Illinois. He stated the importance of considering coal as a burning fuel as well as a raw material for gasification and liquefication.

January 30, 1975 - Supporting Agencies

Mr. Jack Simon, Acting Chief of the Illinois Geological Survey presented a statement with regard to the capabilities of the Geological Survey Organization. Mr. Simon then described a basic study conducted by the Geological Survey and the Water Survey which had the purpose of combining coal and water resources in Illinois. Mr. John B. Stall of the State Water Survey described the collection of water data to show Illinois water resources.

Mr. Sidney M. Marder, Director of Energy Development of the Department of Business and Economic Development gave the members of the Commission a written statement and presentation concerning the general activities of his department and a summary of the projects that have been proposed for consideration by that department.

Other discussions included: Potential availability of federal grants for reimbursement of some of the expenses associated with energy resource development; working procedures for the commission; retention of Donald G. Handy as Staff Administrator and Merle White as secretary to the Commission.

February 21, 1975 - Coal Conversion Possibilities

Mr. R. John Fallon the Federal Energy Administration, Washington D.C. presented a statement entitled "The Utilization of High Sulfur Coal" and reported on the President's Energy Program. All programs point to increased utilization of coal. There is concern in Washington that the use of coal has shown no appreciable increase in the last 25 years, while oil and natural gas demands continue to increase. He stated that

one third of the bituminous coal reserves in the nation are in Illinois and that it was their plan to increase coal production in Illinois by 9% per year.

Dr. Chris W. Knudsen, Office of Energy Research and Development, Washington D.C., spoke on the "Government Coal Conversion Research and Development Program," and stated that the federal government was now spending hundreds of millions of dollars each year on coal research.

Northern Illinois Gas Company is seeking State participation, if accepted by ERDA, for a research and development project to prove the commercial practicality of converting Illinois High-Sulfur coal to clean liquid and gaseous fuel. This would be a joint undertaking with the Energy Research and Development Administration, the State of Illinois, Northern Illinois Gas Company, and other private interests to design, construct, and operate a demonstration plant, using the COED process to convert approximately 10,000 tons per day of coal to 10,000 barrels per day of synthetic fuel oil and 100 million cubic feet per day of synthetic natural gas. The total project to be performed over a 100 month period and be divided into four specific phases as follows:

Phase I -- Preliminary Engineering
(7.4 million dollars to be funded by ERDA)
Phase II - Detailed Design of Pilot Plant
(51.0 million dollars to be funded by ERDA)
Phase III -Demonstration Plant Construction
(342.0 million dollars - 50% funded by ERDA)
Phase IV - Plant Testing
(425.0 million dollars - 50% funded by ERDA)

Other presentations included: Southwestern Illinois Planning Commission on a cooperative approach to the impacts of expansion of the Illinois Coal Industry promotion of a coal resource center in IL; and assistance in evaluating proposals.

March 6, 1975 - Energy Reserves

Ther General Electric Center for Energy Systems represented by Harold B. Finger and Mr. Brooks made an initial presentation to the Commission on their proposed G.E. Pressurized-Fluidized Bed Pilot Plant. The plant would be located at the Wood River Power Plant of Illinois Power Comapny. Plans call for preliminary engineering to be completed by 1977, final design 1978 and construction completed in 1982. General Electric will be requesting State assistance in the amount of $12 million pending approval by ERDA.

Mr. Jerald Wray and Dave Ostendorf of the Illinois Environmental Council expressed concern with regard to the powers of Eminent Domain granted the Department of Business and Economic Development and requested the Commission to act on all matters of environmental control before eminent domain was exercised by the Department. The Chair appointed a subcommittee of Senators Glass, Knuppel, and Nimrod; Representatives Dunn and Geo-Karis, and public members; Hartnett and McNeely to consider the matter.

Dr. John Munkers of Sangamon State University presented a statement concerning U.S. and World energy resources and reserves. He said that despite reports, we are not running out of fossil fuels. His report included data on other energy sources such as uranium and geo-thermal energy.

Mr. Glen Seay of the Institute of Gas Technology made a report with regard to reserves of Natural Gas. He stated known supplies were decreasing at the rate of 1 trillion cubic feet per year.

Other testimonies included Thomas L. Reid, Illinois Manufactures Association, and William Porter of Springfield Water, Light and Power, who discussed some of the problems facing industries and utilities using Illinois High Sulfur Coal.

ENERGY TASK FORCE

This energy task force would consist of various government supported groups, such as state agencies, universities and other groups involved directly or indirectly in energy activities (such as regulatory function, energy data inventory, energy research and development, etc.).

The Illinois Energy Resources Commission is establishing a voluntary energy task force to study and investigate various energy related activities and to coordinate the overall efforts. Listed below are members of the energy task force as of March 1, 1975. Additional participants are expected to join this task as time goes on.

Illinois State University
Dr. Robert Nelson

Illinois Office of Education
Dr. J. Robert Sampson

Institute for Environmental Quality
Samuel G. Booras

Department of Labor
Donald Johnson

IL Environmental Protection Agency
Jack Howard

Illinois Commerce Commission
Robert Podlosek

Department of General Services
Eugene Beard

Department of Agriculture
Roger Grace

Department of Personnel
Alden Meyer

Department of Corrections
Joseph A. Feonda

Board of Regents
Sam Baker

Department of Local Government Affairs
Jarl Trammell

Illinois Department of Transportation
Dr. Howard Moon

Department of Revenue
John E. Briggs

Capitol Development Board
Rolland Killian

Department of Public Aid
Ron L. Parish

Board of Higher Education
Frank E. Smith

Business and Economic Development
Sid Marder

Chicago State University
Dr. John Newell

Eastern Illinois University
Dr. Thomas O. Jones

Division of Vocational Rehabilitation
Robert Horn

Office of Manpower and Human Development
Joan L. Wills

Commission Activities

ENERGY SEMINAR - The possibility of holding an energy seminar would be beneficial to all individuals, groups, organizations and other interested parties engaged in energy matters. This seminar would be on the general subject of Coal as an Energy Resource. The intent would be to present a balanced report dealing with the use of coal as a source of clean energy. The seminar would be geared to Illinois legislators, their staff, the Illinois Energy Resources Commission members, the energy Task Force as established by IERC, Universities, Colleges, private organizations and others and will be supported by technical documentation. Specific topics might include:

A) Activities of other States with respect to energy programs and the reorganization of state government for energy management.

B) Exploration of State versus Federal roles in coal development.

C) A survey of processes for utilization of Illinois Coal.

(This activity would be coordinated by the Illinois Legislative Council)

ENERGY DIRECTORY - An alphabetical list of both public and private energy experts is being completed as well as a list of various state and federal agencies engaged in energy policy.

(This activity would be coordinated by the Illinois Legislative Council)

ENERGY INVENTORY RESERVES - The Illinois Energy Resources Commission expects to provide for the State a capability which places its level of understanding about its energy situation at least on a par with that of other states. The first step in this direction is to inventory the data of our energy resources. An energy inventory of various segments of the Illinois economy is also essential in order to establish long range energy policies for the citizens of the State of Illinois.

FEDERAL GOVERNMENT IN PERSPECTIVE ON ENERGY

A new federal law created the ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION (ERDA), abolishing the Atomic Energy Commission (AEC). For the first time, all federal energy research activities, including those of the AEC, the Department of the Interior, the Environmental Protection Agency and the National Science Foundation will be gathered under a single agency. AEC's licensing and regulatory duties will be performed by a Nuclear Regulatory Commission.

The new law also authorizes the establishment of an ENERGY RESOURCES COUNCIL, whose chairman will be Interior Secretary Rogers C. B. Morton. The reorganization of energy research programs is said to be a major step toward the administration's goal of creating a Department of Energy and National Resources, that would absorb the Interior Department ERDA's budget of $2.65 billion for the fiscal year ending next June 30 and a projected $3.9 billion in fiscal 1976. All conversion Research and Development is being transferred to ERDA under the Assistant Administrator for Fossil Fuels.

ERDA Coal Conversion and Utilization Program FY 1975 Emphasis is on Liquefaction, and the following are the various stages of same:

Hydroliquefaction	- pilot plant design
Solvent Extraction	- pilot plant operations
Pyrolysis	- pilot plant operations
Indirect Liquefaction	- process research
Hi BTU gas	- pilot plant construction and operation
Low BTU gas	- PDU operations and Pilot Plant design
Advanced Power Systems	- Research Development (MHD)
	- Fuel Related Materials
Direct Combustion	- Fluidized Bed Design and Construction
Demonstration Plants	- Boiler Fuel Demo. Procedurement
Supporting Science and Technology	- Material and Process Research
	- University Program

DEPARTMENT OF INTERIOR

The Interior Department is requesting a budget of nearly $3.5 billion for fiscal 1976 of which $716 million would be earmarked for various energy related programs. The total departmental budget is nearly $227.5 million more than fiscal 1975, and $113 million of that proposed increase is for energy. Over $164 million is requested for departmental energy resource assessment and research, an increase of $32.7 million over 1975. The department's energy program would include $457 million for generating and marketing electric power, $164 million for energy resources and resource analysis and $68 million for energy leasing activities. Many of Interior's former energy research activities such as those of the Office of Coal Research, have been folded into the new ERDA. Furthermore, $191 million was requested for the Bureau of Mines, of which $91 million is for mining and mine health and safety research.

FEDERAL ENERGY ADMINISTRATION

Energy Policy and Analysis, the budget of $23.6 million, encompasses long-range policy for analysis and development of a national energy plan; short and long range supply and demand forecasting; coordination of energy related programs, policies and legislation; development of deregulation and decontrol strategies; and all automatic data processing support for FEA.

Regulatory programs have a budget of $21.7 million. These activities involve assessment of current and future energy supplies and voluntary allocation management of energy resources as needed. This area also provides analytical and statistical information to evaluate energy.

Energy Conservation and Environment has a budget of $25.6 million. This FEA Division develops information through economic and policy analysis to promote efficient use and development of energy resources, provides analysis on environmental issues, and fulfills agency responsibilities under the National Environmental Policy Act. Other major efforts include developing and carrying out new governmental programs to reduce energy demand in transportation, building, industrial and utility sectors, conducting public education and multimedia campaigns in support of energy conservation; and supporting state and local energy conservation.

Energy Resource Development has a budget of $9.7 million. This section develops and carries out national policies and programs to increase production and use of energy from present domestic energy sources and handles total management of all activities leading to U.S. energy self-sufficiency.

International Energy Affairs has a budget of $1.4 million. This activity is responsible for review and coordination of all FEA international activities. Included are development of policy options for oil sharing, mandatory conservation, emergency supply, encouraging multinational energy programs and development and evaluation of U.S. export-import policy options.

In view of the financial allocation being made by the Federal Government for energy expenditures, it is germane to the Illinois Energy Resources Commission and to the State of Illinois that Illinois receive its proportionate share of this allocation for energy research and development.

PRESIDENTIAL ENERGY PROPOSALS

Naval Petroleum Reserves. Provide for development of NPR's 1, 2, and 3 for replenishing existing Defense Dept. stocks for storage in a National Strategic Petroleum Reserve. Also, develop NPR 4 in Alaska thru competitive bidding.

National Strategic Petroleum Reserve. Provide for the construction and maintenance of 1.3-million bbl in petroleum storage facilities. Also, require a detailed implementation plan to be submitted to Congress within one year.

New Natural Gas Deregulation. Permit competitive pricing of new natural gas in the field. Retain existing regulation of transmission and distribution as well as Federal Power Commission regulation of old gas.

Energy Supply & Environmental Coordination Act amendments. Extend Federal Energy Administration's authority to issue orders under the Act to June 30, 1977. Extend FEA's authority to enforce its order under the Act to 1985. Extend FEA's authority to issue orders prohibiting use of petroleum products and natural gas to additional categories of plants.

Clean Air Act amendments. Authorize compliance schedule extensions allowing certain plants until Jan. 1, 1985 to install and operate scrubber systems, or acquire long-term low sulfur coal contracts.

Coal Conversion Related amendments. Facilitate coal conversions while continuing to protect public health.

Auto Emission Standards. Make .9 grams per mile (gpm) hydrocarbons (HC) and 9.0 gpm carbon monoxide (CO) the emission standards for light-duty vehicles manufactured for model years 1977-1981.

Utilities Act. Eliminate: undue regulatory lag by prohibiting suspension of proposed rate schedules for longer than five months; prohibitions against fuel adjustment clauses; and prohibitions against exclusions of legally required costs associated with pollution controls from rate base.

Energy Facilities Planning & Development. Authorize FEA to prepare a National Energy Site & Facility report, detailing the number, type and general location of needed facilities. Require each state to submit to FEA a state energy facility management program.

Energy Development Security Act. Establish Presidential authority to impose tariffs, quotas or variable import fees if a significant drop in the price of imported petroleum threatens to cause an increase in petroleum use.

Building Energy Conservation Standards Act. Direct the Housing & Urban Development Dept. to develop energy conservation standards for new residential and commercial buildings.

National Appliance & Motor Vehicle Energy Labeling Act. Authorize the President to require appliance and motor vehicle labels to give the consumer information permitting comparison of relative energy consumption.

Standby Energy Authorities Act. Authorized the President to control private petroleum inventories; order increased domestic petroleum production; allocate and ration petroleum products; allocate materials needed for energy production and development; provide for international allocation of petroleum; and restrict exports of energy related materials, if national energy shortages threaten the nation's security.

CONGRESSIONAL ENERGY PROPOSALS

Naval Petroleum Reserves. Provide a legislative base for development of reserves in Alaska and at Elk Hills, including the necessary transportation facilities to make an estimated 30-billion barrels available as needed for storage or commercial use.

National Strategic Petroleum Reserves. Create a stockpile that could supply 3-million barrels/day for six months by 1980, and for a year by 1985.

Natural Gas. Rewrite the Natural Gas Act to provide price certainty at levels high enough to reflect future costs. Eliminate regulatory delays to stop the incentive for withholding gas due to uncertainty of pricing policy.

Energy Supply & Conservation. Establish an Energy Trust Fund with taxes on gasoline, inefficient uses of energy, and from lease revenues from the Outer Continental Shelf.

Clean Air Act. Enforce the Act with extended compliance dates to provide for installation of coal cleaning systems.

Coal Conversion. Require the conversion to coal of existing plants over the next 10 years where feasible, and create incentives to convert to coal such as: tax credits; loan programs; fuel taxes.

Outer Continental Shelf. Accelerate exploration by providing greater coastal state involvement; establish a direct federal role in exploration; mandate production under all leases; and require information disclosure.

Exotic Fuels. Provide for commercial demonstration of new synthetic fuel and solar energy technology.

Energy Price, Tax & Competition. Adopt a temporary moritorium on Presidential authority to impose oil tariffs, and establish permanent standards for such authority. Limit President's authority to raise price levels on domestic oil production without Congressional concurrence (SEE SENATE.)

Reform Energy Tax System. Recover windfall profits from oil, natural gas, and coal producers. Repeal depletion allowance for major oil companies but retain reduced benefits for small producers.

ILLINOIS IN PERSPECTIVE ON ENERGY

Implicit in achieving an orderly utilization of coal in Illinois, is the establishment of the appropriate role which the State can play vis-a-vis with both Federal Government and private industry. Since the Federal programs and policies are new and not yet firm, the role of the State must be viewed as flexible and dynamic. In the changing environment, the Commission wishes to help insure that the State and its administrative structure and legislative programs provide an attractive site for promising energy projects.

ILLINOIS ENERGY RESOURCES COMMISSION:

House Bill 2651 (Public Act 78-1125) introduced by House Speaker Robert Blair, was passed by Legislature and was signed into law by Govenor Walker on August 19, 1974.

This law created the Illinois Energy Resources Commission, consisting of ten legislative and eight public members.

The Energy Resources Commission shall review the state's efforts to solve energy problems, seek cooperation of energy producers, promote the establishment of coal research centers in Illinois and to review all proposals submitted for funding under the $70 million state bond issue set forth in Senate Bill 1659 (P. A. 78-1122).

Senate Bill 1659, introduced by Senator Bradley Glass and passed by the Legislature, was signed by Governor Walker on August 19, 1974.

This law authorizes a fund of $70 million for use in "Research, Development, and Demonstration of Improved Methods of Discovery, Production, Transportation, Sale, Distribution, Conversion, End-Use and Waste Disposal of Coal Resources".

Senate Bill 1659 created the Illinois Energy Advisory Council on Coal Development. The Council consists of eight state department heads and the Governor and Lt. Governor, and will plan projects under this law.

OFFICE OF THE ILLINOIS ENERGY COORDINATOR:

The primary responsibility of the Energy Coordinator's Office is to implement the Mandatory Fuel Regulation issued by the Federal Energy Administration. In addition, the Office has provided coordination in the other areas of energy development and energy consumption. During the recent United Mine Workers coal strike, the Office monitored the supplies of coal available throughout Illinois.

Although the developing state energy program will rely heavily on the utilization of Illinois' vast coal reserves, the Coordinator's office also is involved in other energy sources.

DIVISION OF ENERGY

The Division of Energy of the Department of Business and Economic Development was established in August of 1974. Its primary responsibility is the administration of the $70 million coal development bonding authority. As a part of this function, the Division has been communicating with numberous industrial and not-for-profit organizations regarding requests for assistance. The Division will attempt to assemble various industrial groups in the State into consortiums with the ultimate goal being location of coal development projects in the State.

When projects are proposed to the Division, it will completely review the technical merits and environmental compatability and make such recommendations to the Energy Resource Commission as it deems appropriate.

The Division of Energy is also involved in fostering coal research centers within the State, as well as being instrumental in establishing long range energy goals for the State.

Effective July 1, 1975, the Office of the Energy Coordinator will be absorbed by the Division of Energy. This "roll in" will yield a central focal point regarding energy matters within the executive branch of State government.

B. ENERGY DEVELOPMENT EVOLVEMENT
   1. Promote the establishment by the federal government of a coal resource, research and development center; and other federal energy projects in Illinois, and search for additional other means of using Illinois coal to meet Illinois energy needs with due attention to environmental priorities.
   2. Seek the cooperation and assistance of energy producers, institutions of higher education, energy research institutions and other public and private organizations interested in finding solutions to energy related problems.
   3. Disseminate relevant information to the public for purposes of consumer education and protection.
   4. Involvement of all segments of the State of Illinois for a meaningful and constructive energy program, proportionate to our resources and size.

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   1. Necessary background information of agencies:
      (a) What is each agency currently involved with in energy?
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      (f) What areas should be covered?
      (g) What areas are not covered?
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         (2) Industry and Business
         (3) Transportation
         (4) Government
         (5) Private use
         (6) Other
      (b) Type of energy supplies.
         (1) Nuclear

(2) Coal
(3) Gas
(4) Solar
(5) Oil

2. Implementation of necessary energy data for energy coordination required by the State.

F. EVALUATION OF REQUESTS FOR COAL AND OTHER ENERGY RESEARCH AND DEVELOPMENT FUNDS.

PRESIDENTIAL ENERGY PROPOSALS

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National Strategic Petroleum Reserve. Provide for the construction and maintenance of 1.3-million bbl in petroleum storage facilities. Also, require a detailed implementation plan to be submitted to Congress within one year.

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Utilities Act. Eliminate: undue regulatory lag by prohibiting suspension of proposed rate schedules for longer than five months; prohibitions against fuel adjustment clauses; and prohibitions against exclusions of legally required costs associated with pollution controls from rate base.

Energy Facilities Planning & Development. Authorize FEA to prepare a National Energy Site & Facility report, detailing the number, type and general location of needed facilities. Require each state to submit to FEA a state energy facility management program.

Energy Development Security Act. Establish Presidential authority to impose tariffs, quotas or variable import fees if a significant drop in the price of imported petroleum threatens to cause an increase in petroleum use.

Building Energy Conservation Standards Act. Direct the Housing & Urban Development Dept. to develop energy conservation standards for new residential and commercial buildings.

National Appliance & Motor Vehicle Energy Labeling Act. Authorize the President to require appliance and motor vehicle labels to give the consumer information permitting comparison of relative energy consumption.

Standby Energy Authorities Act. Authorized the President to control private petroleum inventories; order increased domestic petroleum production; allocate and ration petroleum products; allocate materials needed for energy production and development; provide for international allocation of petroleum; and restrict exports of energy related materials, if national energy shortages threaten the nation's security.

CONGRESSIONAL ENERGY PROPOSALS

Naval Petroleum Reserves. Provide a legislative base for development of reserves in Alaska and at Elk Hills, including the necessary transportation facilities to make an estimated 30-billion barrels available as needed for storage or commercial use.

National Strategic Petroleum Reserves. Create a stockpile that could supply 3-million barrels/day for six months by 1980, and for a year by 1985.

Natural Gas. Rewrite the Natural Gas Act to provide price certainty at levels high enough to reflect future costs. Eliminate regulatory delays to stop the incentive for withholding gas due to uncertainty of pricing policy.

Energy Supply & Conservation. Establish an Energy Trust Fund with taxes on gasoline, inefficient uses of energy, and from lease revenues from the Outer Continental Shelf.

Clean Air Act. Enforce the Act with extended compliance dates to provide for installation of coal cleaning systems.

Coal Conversion. Require the conversion to coal of existing plants over the next 10 years where feasible, and create incentives to convert to coal such as: tax credits; loan programs; fuel taxes.

Outer Continental Shelf. Accelerate exploration by providing greater coastal state involvement; establish a direct federal role in exploration; mandate production under all leases; and require information disclosure.

Exotic Fuels. Provide for commercial demonstration of new synthetic fuel and solar energy technology.

Energy Price, Tax & Competition. Adopt a temporary moritorium on Presidential authority to impose oil tariffs, and establish permanent standards for such authority. Limit President's authority to raise price levels on domestic oil production without Congressional concurrence (SEE SENATE.)

Reform Energy Tax System. Recover windfall profits from oil, natural gas, and coal producers. Repeal depletion allowance for major oil companies but retain reduced benefits for small producers.

Feb. 27 Joint Atomic Energy Committee: Will hold hearings on Nuclear Regulatory Commission's appropriation requests for biomedical and environmental research and operational safety; and waste management.

Feb. 27, 28, early March Senate Banking Committee: Will hold hearings on S409, extending and expanding the authority of the Council on Wage & Price Stability to cover price control of old and new domestic oil. (SEE SIGNIFICANT LEGISLATION.)

March 3-6 Senate Interior Committee: Will hold hearings on S598 Energy Research & Development Administration authorizations.

March 4 Joint Atomic Energy Committee: Will hold hearings on Nuclear Regulatory Commission's appropriation requests for physical research.

March 4-6 Senate Banking Subcommittee on Securities: Will hold hearings on S425 Foreign Investment Act